Performing Music Production: Creating Music Product

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Declaration of Authorship

I declare that the work in this dissertation was carried out in accordance with the regulations of King's College London. The work is original, except where indicated by special reference in the text, and no part of the dissertation has been submitted for any other degree. Any views expressed in the dissertation are those of the author and in no way represent those of King's College London. The dissertation has not been presented to any other University for examination either in the United Kingdom or overseas.

SIGNED: .....

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Abstract

The purpose of this thesis is to investigate a particular form of cultural production; the creation of musical product, the pop song. Previous accounts have been dominated by casting the process as one of transmission in which the music of the artists is captured in a recording and the resulting object is released into the market. I argue that this portrayal of cultural production as a pipeline directs attention towards activities at either end: the recruitment of talented artists and the distribution and promotional efforts of the record companies. What happens in the 'pipe', how the product is created, is concealed, explained away by reference to stylised notions of technological and economic forces and the operation of unknowable creative talent. To open up this 'black box', an approach not previously applied to popular music production is used, actor-network theory. This thesis traces the formation and performance of moments in the production of musical product: songwriting, recording, mixing, mastering and live performance. Tracing the production of music is carried out through analysis of interviews conducted with the protagonists, the producers, engineers, studio managers and artists, and is supported by observation of studio sessions.

The principal argument that I develop in the thesis is that musical product is not a discrete 'thing' to be diffused, but a networked entity indissociable from the roles and identities, qualities and practices of others that constitute and perform the production, reproduction and consumption of popular music. Accordingly in this thesis musical product is revealed as an achievement, not an a priori fact, and I examine how its constructed qualities are stabilised and shape the network of production and consumption. Following the construction of these qualities reveals how the various interests of the protagonists are translated through their enrolment in practices and systems of calculation into relational arrangements that perform the power of the producer. The contribution of this research lies not just in making visible what has previously been obscured, but also in the way that it illustrates the value in analysing organised activity as a performative association of relationally constructed roles, objects, and qualities, of, in this case, the musical product, colloquially known as 'a pop song'.

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Chapter 1

The Cultural Industry and Popular Music

Introduction

Popular music is almost ubiquitous (Hosokawa, 1984). Its form, a 3 to 4 minute song, is broadcast in public and private spaces, performed in bars, clubs and stadia, streamed into computers, downloaded from servers, and bought in shops. The widespread distribution and accessibility of popular songs, originally in the US and Western Europe, and then spreading globally[1], is matched by their diverse and abundant supply. In the UK alone the Phonographic Performance Licensing organisation, currently receives around 6,500 new recordings every week (PPL, 2009). Music is an unusual product. It is highly standardised, and widely distributed, but cannot be described as mass produced, it is mass *re*produced. How does a product that is not mass produced maintain its form? How are the temporarily connected actors involved in the production process organised? How is a market based on the novelty accompanying numerous product releases arranged? These are some of the apparently taken for granted questions that this thesis addresses.

Historical accounts of the development of the popular music recording industry are available, describing the emergence of the sector in a structural and technologically teleological manner. They trace its emergence from Edison's recording of 'Mary had a little Lamb' in 1877, through mass selling (million plus) Jazz records in the 1920s, to the emergence of Rock and Roll, and the establishment of popular song chart listings in the 1950s (Gelatt, 1977; Cunningham, 1998;

[1] For example in Japan it is referred to as J-Pop, in Korea, K-Pop.

Gillett, 1996). In these accounts writers describe how the organisation of music as a product shifted from an industry centred on the sheet music of Publishing Houses, towards one based on the sale of recorded songs created by Record Companies, originally divisions of music equipment manufacturers (Chapple and Garofalo, 1977; Kraft, 1996; Gronow and Saunio, 1998; Barfe, 2004). Similarly the development of recording technologies used in the creation of a recording, from styluses that etched sound vibrations onto wax discs, through electrical recording and the use of magnetic tape to digitally sampled recordings, has been traced and chronicled (Chanan, 1995; Warner, 2003; Katz, 2004).

However, although described as the recording industry, empirical research into the practices involved in the creation of music product, the processes of recording, the nature and type of decisions made, and organisation of the different representatives (artists, producers, engineers, studios, record companies) with their often competing interests and claims on decision making power, has been largely ignored. The production of musical product is effectively black boxed, viewed in terms of inputs and outputs and rendering the action in between opaque. Artists go into the studio, they work with a producer and engineer and a product comes out to be distributed and broadcasted. But what happens in the studio is not clear. There are accounts of recording studio practice, but these are largely hagiographic treatments of key moments in the lives of great artists (e.g. Kahn, 2000, 2002; Harris, 2006; Goldman, 2006) or celebrated producers (e.g. Howard, 2004; Farinella, 2006; Brown, 2007) that struggle to offer insights into how the songs were recorded beyond conceptually romantic and individualistic accounts of creative magic and star artists (Droney, 2003). This is a significant omission, especially so when we reflect on how the product form, the recorded song, has (apparently) remained largely unchanged (e.g. duration, verse chorus structure) since its popular distribution in the early 1950s, and take into account the large numbers of songs produced by numerous, diverse and temporary project groups. The reasons for this comparative neglect involve a mixture of factors, practical and conceptual, including difficulty of access, bias within organisational research towards firms (rather than the project based organising of recording practices), a consumption-focussed perspective of the cultural industries, and the opaque nature of talent or creativity based explanations of human activity.

The scale of this neglect is reinforced when we consider the large body of research conducted on other aspects of the popular music industry. As a source of texts that influence how people understand their world, popular music has generated a great deal of sociological studies on identity and social movements (Savage, 1991; Garratt, 1998; Robb, 2006; Savage, 2006). Popular music's participation in global media networks has attracted the interest of political economists concerned with issues of the role of the state (Garnham, 1987; 1990) and the prospects for cultural control within a corporatised cultural economy (Attali, 1985). Organisational theorists and sociologists have considered the structural conditions, competition and market power between record companies (Frith, 1996; Hesmondhalgh, 1998; Negus, 1999a) considered cultural policy issues (Malm and Wallis, 1992; Bennet et al., 1993; Laing, 1999), while geographers have examined spatial organisation and consumption (Curtis and Rose, 1983; Garofalo, 1993; Connell and Gibson, 2003) and economists have analysed copyright regimes (Burke, 1996; Towse, 2001; Tschmuck, 2009). Yet, these literatures are only possible because music is translated into a product.

The objective of this research is therefore to explain the production of a cultural product whose sale and consumption generates so much research interest, the popular music song. To examine this neglected dimension of the music industry, I will investigate the properties and practices of the recording project and its site of action, the studio, over the previous 20 years. This covers a period of increased recording activity, during which the number of newly released albums (with approximately 12 songs on each) in the UK, increased from around 11 thousand to over 33 thousand (BPI, 2009). It is also a period in which recording technologies are comparable, with digital mixing desks and production software having replaced analogue tape based equipment. The justification for this research enquiry is not, however, wholly determined by the empirically neglected explanations of product creation within the music industry. As I will explain, product creation is not merely an under-examined link in a chain of activities that stretches from artists through record companies to consumers, it is a constituting set of practices and meanings that shape and enable the configuration of production and consumption that we recognise as the music industry. Understanding how music product is produced will explain how the recorded music industry as a whole (production, reproduction and consumption) operates, and

fundamentally, shed light on how power is distributed between the protagonists: the artists, producers, engineers, studio owners and recording companies.

This chapter has two objectives. First, to set the terms of this research query in a relevant conceptual and empirical context, literature on the production of cultural products will be assessed. Providing an integrative literature review of this vast field is not straightforward, as the concepts and approaches to research it encompasses, range over such a wide territory. However a path can be picked that, starting from the mass culture perspective, traces a development toward a more networked depiction of cultural production systems. We can see it as a narrowing down of focus from structures to actions. A move away from a preoccupation with metanarratives such as capital power and social structures, down through an organisational and industry level of analysis where these structural forces are played out, towards a more practice based, relationally networked, conceptualisation of the organisation of the production of cultural products. However, though arrival at a networked articulation of production, with a welcome focus on the project based form of organising, does bring us closer to the action, its explanatory promise is held back by a continuing reliance on wider structural forces and an acceptance of preordained entities (organisations, products, places of production). The use of the performative network view of actor-network theory is signalled as a solution. Before looking at the merits of this approach it is necessary to introduce the site of this research, the popular music industry.

The second objective then, is to demonstrate the applicability of this argument on existing research into cultural production by reviewing the literature on popular music production and considering what it tells us about how music products are made. We will see how, though purporting to explain music production, the identified structural conceptualisation of the production of cultural products diverts attention away from understanding how music is made into a product. The chapter concludes by proposing that our understanding of the music industry network of production and that of other moments in the music industry, reproduction and consumption, will be improved if we construct our examination around the practices involved in music production and treat with caution explanations of cultural production systems such as the

music industry that draw on abstracted depictions of technology, economics, society and organisations. This chapter thus sets up the need to use an alternative conceptual position in order to research a neglected aspect of the production of cultural products, how they are made.

1.1 The cultural industry: origins

Popular music production is, along with film, publishing and broadcasting, one of the fields of activity that make up what Adorno and Horkheimer coined as the culture industry (1947). Departing from the belief within Marxian analysis that labour would ultimately triumph over capital, they aggressively argued that capitalist institutions, in opposition to social utility, had captured and would continue to control the production of culture through the dissemination of cultural goods. In so doing, the meaning based element of cultural activity is removed and becomes 'just business' (1947:32). Their conclusion was that only by remaining outside the capitalist system, could cultural activity remain truly cultural. This argument rested on a restrictive and idealised view of culture as being of a critical and self-reflective character able to resist standardisation and provoke radical reflections in the mind of the serious listener, viewer, or reader. Real cultural products did not include all texts that carried meaning, as in later formulations of cultural goods, but were limited to those that resisted standardisation and commoditisation and thus could not be introduced into practices of industrialised production and consumption. In this viewing, popular music could not be a cultural activity, it was part of a culture industry.

Adorno and Horkheimer's argument is extremely pessimistic over the nature of the mass culture society they envisaged, was conducted in a dogmatic style and was highly dismissive towards culture aimed at entertainment rather than the art which they believed enabled individual self-improvement. Their main focus (attack) was on the features of mass produced culture and not, as Adorno (1991) acknowledged, on the aspects of the cultural production process per se, a consumptionist view of production that has contributed to the neglect this research seeks to

redress. That said, their emphasis on the development of regimes of standardisation and the use of similarity to other cultural products to gain a "surrogate identity" (Adorno and Horkheimer, 1947:38) and thus value in the eyes of the listener, are, if we strip away the moral overtones of their culture/entertainment distinction, useful pointers to carry into our examination of the popular music industry.

Adorno and Horkheimer's influential argument was a reply to Walter Benjamin, whose essay 'The Work of Art in the Age of Mechanical Reproduction' (1936) tackled similar themes. A key part of Benjamin's argument considered the effect of mechanical or mass reproduction on the original work, such as a song, painting, or performance. This was elaborated using the concept of aura, a perception of authenticity arising from the attachment of the object with its origin, its location. Benjamin described how mass reproduction prises the object from its shell of origin and destroys its aura, its authenticity, replacing the reality of its production with alternative qualities now newly discernible through the medium of its reproduction. Although this account involves the loss of authenticity, Benjamin doesn't agree with Adorno and Horkheimer's (1947) depiction of this process as a negative, dehumanising one. This is because the act of reproduction allows for the work to be transported and brought closer to the experience and control of people enabling them to make quality judgements, as well as benefiting from the simultaneous collective experience of mass reproduced work (Docker, 1994:46). Though he proposes that, "to an even greater degree, the work of art reproduced becomes the work of art designed for reproducibility" (1936:218), a relationship that will be examined in this research, the effect of reproduction on the mode of production and the qualities of the product in question, are not, unfortunately developed, and, as with Adorno and Horkheimer, Benjamin remains primarily focussed on dissemination and consumption. However his description of reproduction as one of separation and displacement are promising perspectives with which to analyse the modes of production that are specific to a culture industry.

The social control view of mass produced cultural product that these early works advanced, continues to frame political economy treatments of cultural production by writers such as Attali (1985) Garnham (1987) and Ryan (1992). In these later interpretations culture has not been fully

captured, as in the Adorno and Horkheimer argument, but is the site of an unequal struggle between the institutions of capital and the creative systems of production used by artists. Studies set in the capital/artistic labour dualism point to the ownership of the means of mass distribution and promotion by large corporations who use capital power to restrict access to market and construct contracts enabling them to obtain and exploit their ownership rights of artists' labour (Eliot, 1993). Complete dominance of the type decried by Adorno and Horkheimer, is however forestalled by the uncertain value of cultural products and the volatility of market taste (Caves, 2000). This unpredictability ensures that new products emerge preventing or at least periodically disrupting the standardisation efforts and market control of large corporations. It remains though that the effect of such demand uncertainty only allows for temporary and ultimately unsuccessful resistance by artistic labour and, echoing Adorno and Horkheimer, full emancipation from this "society of repetition" (Attali, 1985:5), will only be achieved when cultural production of symbols is located in civil society with individuals self-managing the creation and communication of their cultural expression.

Though this early formulation continues to influence approaches to cultural production, a shift from a totalising depiction of the culture industry, hostile both to the quality of the product involved and to the freedom of those who consumed it, towards a more organisational and less value laden treatment of the practices and organisation of the production of cultural products occurred in the early 1980s (Hesmondhalgh, 2002). Focussing on the symbolic quality of cultural products (Lawrence and Philips, 2002), rather than on the use of cultural production to control culture, writers within economic and sociological disciplines began to examine the different organisational forms, structuring properties and constraining institutions engaged in the production of cultural products.

1.2 Defining cultural products

At this juncture in the grounding of this research investigation, where the product features and the organisation of its production processes rather than the use of mass production to control culture begin to become more important, it is necessary to pause and examine the specificities of cultural products and their production practices. Defining the cultural industries is a challenging task, one made more difficult by the introduction of the term Creative Industries by the British Labour government (DCMS, 2001) and the subsequent conflation and interchangeable use of the two terms (Cunningham, 2002; Hesmondhalgh, 2002; Galloway and Dunlop, 2007). A common starting point is the classification criteria gathered together by Throsby (2001). Throsby proposed three, broad, qualifying criteria against which to identify the cultural industries: "Activities [that] concern some form of creativity in their production... are concerned with the generation and communication of symbolic meaning... and that their output embodies some form of intellectual property" (2001:4). However, the first of these, creativity, is if anything, "an even looser word than culture" (Hesmondhalgh, 2008:560), and its use increases the difficulty of defining and distinguishing between different areas of activity. Indeed it was by basing the classification of creative industries around the 'execution of ideas' that the creative industry term brought software development and advertising alongside the core cultural industry activities of music film and broadcasting, a move that brought further definitional confusion to the already tangled attempt to define cultural industries. Detailed coverage of the definitional debates over the relative merits of the terms 'Cultural' and 'Creative' Industries is available elsewhere (Garnham, 2005; Hesmondhalgh and Pratt, 2005; Galloway and Dunlop, 2007).

The second criterion, the symbolic quality of the product, is more helpful in determining what is and is not part of the cultural industries. Products with mainly symbolic value refer to those who carry texts or meanings used by consumers to understand their world (Hirsch, 1972; Garnham, 1987; Hesmondhalgh, 2002). Such products are distinguishable from other products whose first use is functional. Though this aspect of cultural products provides important clarity, it is vulnerable to the 'all is culture' argument (Baudrillard, 1983), what Lash and Urry term the

"semiotisation of everyday life" (1994:61). As all products and services are involved in the construction of meanings through which people live, all industries can be described, to some degree, as cultural (Flew, 2002). This is variously viewed as the economisation of culture or the culturalisation of the economy (Scott, 2000; Jackson, 2002). It may appear then that as a definitional term, culture is no better than creativity. However, the reflexive relationship between the economy and culture does not mean that the symbolic nature of cultural goods is an irrelevant defining feature of cultural industries. For the meaning based purpose of cultural industries is not intended to provide, on its own, a sufficient classifying attribute of cultural industries. There remains value in recognising that while all products may have both functional and symbolic use values, cultural products are distinguishable by the primary purpose being their communication of meaning (Hesmondhalgh and Pratt, 2005). With this accommodation the mixed use values of products (symbolic and functional) becomes a reason for the importance of researching cultural industries as they offer insights into the development of the economy as a whole (Pratt, 2008).

The third feature, the embodied intellectual property of cultural products, forms a major element in economic analysis of the cultural industry (Towse, 2003) and is a key part of policy debates (Hesmondhalgh and Pratt, 2005). The exchange of intellectual property in return for capital and organisational resources required to distribute and promote the work forms a key part in economic explanations for the organisation of the cultural industries (Caves, 2000). However intellectual property and the contracting of copyrights, is, as with creativity, able to be applied to a wide range of activities expanding the group of activities to include scientific and technical works. Once again, a defining attribute of cultural industries does not on its own provide definitional clarity. The response to this is to argue that though individually challengeable, taken together these attributes provide researchers with sufficient criteria to draw boundaries around a group of cultural industries (Throsby, 2001).

There remains, however, an additional definitional problem unresolved by the combination of these attributes. This is because they enable the inclusion of the 'creative arts', drama, dance and art, to be ranked alongside the activities of music film and broadcasting. As the creative arts

and the music and film industries differ markedly in the way they are produced and disseminated, an aspect not developed by Throsby needs to be included in our classificatory remit for cultural industries, that of its modes of production (Galloway and Dunlop, 2007). Including this dimension, cultural industries can be further defined as involving the mass production (or more accurately, mass reproduction) of symbolic products (Hesmondhalgh, 2002). Two consequences follow: one, that with low or zero costs of reproduction economies of scale are present in the industry, and second, that the lack of functional attributes, their symbolic value, produces highly uncertain demand characteristics. This mix of economic and sociological reasoning forms a key part in current approaches to the study of cultural industries, resulting in a frequently asserted characteristic, the 'nobody knows' quality of cultural products (Caves, 2000:14).

The task of explaining the interrelationship of economic and sociological factors accompanying the definitional debates over the cultural industries was taken up by researchers within what is termed, the production of culture perspective. This literature shifted the debate on cultural industries away from the consumption focussed treatment of mass production theorists (Benjamin, 1936; Adorno and Horkheimer, 1947) toward a more production orientated one that aimed to examine how cultural production was organised.

1.3 The production of culture perspective

The production of culture perspective, strongly associated with Richard Peterson's work on the music industry (Peterson, 1976; 1982; 1990; 1997; 2000) considered the sector of cultural production as being as a nexus of relations between legal institutions (copyright), technological tools (formats and techniques of reproduction and distribution), consumer market characteristics (dynamic preferences) industry structure (degree of concentration) and organisational structures (size and guiding institutions).

In this approach, cultural production was problematised as a conflict between two distinct institutionalised practices which were embodied in organisations located at different stages of a chain of activities that linked artistic creation to mass distribution and promotion. Institutions, or patterns of behaviour and values based on taken for granted assumptions connected to certain situations (March and Olsen, 1984), differed according to where the individual was located within the culture industry. At product development stages, craft based practices set within values of creative freedom (self-expression, experimentation and intrinsic rewards), guided action (Stinchcombe, 1959). At the investment and distribution stages, values and practices associated with standardisation, mass distribution, market power and the maximisation of revenue shaped behaviour (Hirsch, 1972; 2000). Craft based institutions were set in loose informal groups, while institutionalised practices of mass distribution and market control were to be found in hierarchically organised corporations.

This formulation of cultural production resulted in what became a key problematisation, the relationship between industry structure and cultural products. The operation of the two institutional logics was argued to result in two different kinds of cultural product: general mass appeal products and specialised niche products (Peterson and Anand, 2004). As cultural product was held to be a function of the structure of the institutional environment, when the large generalist organisations held a high percentage of market share, cultural product was homogenised, and when industry concentration was low, the diversity of cultural product, supplied by specialist organisations, increased (Peterson and Berger, 1975; Lopes, 1992). This framing of cultural production created problems for its proponents. Defining product diversity is a difficult task, and the findings of writers working in this perspective were challenged by research which did not find support for the assumed relationship (Burnett, 1992; Alexander, 1996). Carroll's notion of resource partitioning (1985) offered a cyclical explanation for the failure to tie empirical findings to the assumed relationship between industry structure and product diversity. He explained the observed preservation of product diversity in defiance of the capital power of large organisations, by suggesting that while large generalist organisations seeking products with the widest possible appeal benefitted from economies of scale, they also suffered from the increased costs associated with competition with other generalists. This left

smaller specialist operations free to seek out and respond to more niche markets that were less contested, using resources that were as a result of their lack of demand, less costly to obtain (Mezias and Mezias, 2000).

Alternative explanations for the preservation of product diversity despite the presence of large generalist organisations were based on a dialectic of resistance and appropriation. Using subcultural studies on resistance to dominant cultural products (Hedbige, 1979; Gelder and Thornton, 1997), Peterson and Anand (2004) offered a cyclical variation of the mass culture thinking from which they drew their influence. Resistance to dominant cultural products was, they argued, a way some groups created their identity, and in so doing produced new forms of cultural expression around which a niche market developed. The mass appeal generalists whose actions helped encourage such resistance based innovations and allowed them to grow by their focus on wide appeal production and consumption resources, eventually recognise the potential value of the resistors and co-opt the movement. Using this perspective, music industry writers such as Laing (1986) and Negus (1999b) reported how large generalist record companies continue to emphasise the originating values of resistance, and acquire or generate copies of the cultural practice and by using their distributional and promotional resources build the niche into a mainstream cultural form.

A particular example of this corporate capture argument was described in a study of the construction of the country music genre in the mid 1920s (Peterson, 1997). His account illustrated how the spread of this new form of cultural expression, made possible by the increase in radio stations in the 1920s, was captured and rendered into a commodified form by economically powerful and hierarchically organised record companies. The construction of a genre, a set of identifying product characteristics that allows production to be classified and thus administered, echoed Adorno and Horkheimer's concept of "surrogate identity" (1947:38). By establishing codes of similarity, copied from successful cultural products, some of the risk and uncertainty over the methods of production and the value of demand could be reduced. In the case of country music this was achieved by establishing an image for performers through the development of promotional material that matched the consumers' belief that the music was

originated in rural North America by old-timer and hillbilly performers. Along with image, the lyrics and playing styles were also constrained by the record companies until a format had been established in the minds of performers and consumers. Through selection of performers and songs and the use of costumes and appropriate settings for promotional photographs, the record companies were able to manufacture the authentic country music artist and song from a wide range of different musicians. An emerging and dynamic style of music had been standardised into a genre, thus reducing a cultural movement into a manufactured product that could be reliably supplied in standardised form to the market (Hughes, 2000).

The construction of genres by incumbent mass production organisations was therefore described in economic terms as a way of reducing risk and stabilising demand (Negus, 1992, Ryan, 1992; Crain and Tollison, 1997). This is a calculative, organisationally driven and ultimately market determined argumentation. Explanations for the emergence of market risk reducing administratively organised genres was also accounted for using a further body of work, new-institutionalist theory, principally the use of mimicry to gain social credibility. Writers such as Meyer and Rowan (1977), Scott (1987), and Powell and DiMaggio (1991) had redefined institutions away from behavioural norms embodied in organisations towards a more cognitive process, operating at a societal level. In this reworking of institutional practice, individual actors were not offered a guiding framework in which to make calculative decisions but acted according to taken for granted rules, cognitive schema that scripted behaviour. According to this formulation of institutional practice, it was not efficiency of action within constraints that guided behaviour, but the pursuit of social legitimacy. By acting in line with established and validated actions and interpretations, individuals increased their legitimacy. Applying this reasoning to cultural production, producers of cultural product were argued to follow genre conventions, not due to their risk reducing effects but in order to be associated with established practices. Importantly, competing for social legitimacy did not necessarily mean that this behaviour was without economic benefits (Powell and DiMaggio, 1991). By being regarded as a legitimate film producer, writer or dancer, for example, producers were able to draw down (or at least compete for) support from investors, distributers and the media and other promotional

agencies who also operate according to accepted classifications of what is appropriate and what is not.

By redressing the consumptionist bias, identified as present in studies of the culture industries (Pratt, 2004a), and portraying the production of cultural products as involving the interplay of economic and social forces, the production of culture perspective may, as DiMaggio (2000) believes, have made a useful contribution to the study of cultural production. Literature in this tradition offers a diverse array of institutions, organisational values, individuals and structural features from which to weave explanations of cultural production and consumption. Taken selectively they provide interesting accounts of complex and conflicting interests and attitudes. However, as a whole, the precise way the various elements and attributes interact and combine is not clear (Hesmondhalgh, 2006). Ultimately, the production of culture view is an assortment of structural, market power, organisational and societally located institutions from which a variety of different organising explanations for cultural production are possible. One way of reading this flexible portrayal of the interplay between social institutions and economic imperatives is to describe it as part of the "Parsonian legacy" (Pratt, 2004b:519), the separation of the social and the economic into discrete worlds (Parsons, 1949). In this case, production and distribution markets operate along economistic lines, which are then variously subjected to social forces. This binary formulation of human activity not only results in explanations that can seesaw confusingly between the operation of each dominant force, but also distances explanations from the study of the particular practices of the participants, the objective of this research. The result can be unsatisfactory with more attention given to the operation of abstracted, unknowable motivations and forces, than on the activities and relations that take place. With the result that activities and relationships are folded inside broad conceptions of organisational behaviour, simplistically portrayed as unproblematic collective agencies (often economic) moderated by an institutional context. Bourdieu's work (1993a; 1996) on the fields of cultural production can be seen as a response to these limitations of the production of culture perspective.

1.4 Operationalising cultural production: Bourdieu's fields of production

Bourdieu (1993a; 1996) sought to construct a conceptualisation of the operation of cultural production by elaborating a theory of cultural production practice that accommodated and linked the structuring properties of different institutions without surrendering the agency of individuals. Providing a depiction of the interrelationships between economic power and social and cultural resources, while attempting to avoid relapsing into essentialist notions of the creative artist. Bourdieu attempted this by proposing that the starting point for the analysis of the systems of co-ordination within the sector was not the entity, be it the individual, organisation or institution but the "transaction contexts within which they are embedded" in the case of the individual, or reproduced, in the case of the organisation or institution (Emirbayer, 1997:287). It is the relations between the positions of agents, not the relations between agents that are the key to understanding Bourdieu's analysis of cultural production. This positional view of the relationships between individuals structures and organisations was explained through the use of a number of concepts introduced by Bourdieu: field, capital and habitus. A brief review of his argument is necessary before evaluating its possible contribution to the aim of this study.

Bourdieu's resolution for the structure agency problem, traceable to Parson's influential work, comes in his definition of habitus. To take up a position within a particular field of activity, individuals must possess the appropriate habitus, often described as "feel for the game" (Johnson, 1993:5). Habitus is defined as a set of dispositions developed over the life of the agent in response to the objective structures in which the individual operates. This description of habitus clearly echoes the structural argument of sociological institutionalism seen in the production of culture perspective, particularly when described as "the social inscribed in the body" (Bourdieu, 1985:113). However, Bourdieu does not intend to deny the possibility for more calculated and self-aware, reflection and action. In the struggle for dominance within the field, the agent consciously constructs strategies and evaluates the outcome of their action, albeit always constrained by the individual's habitus. This freedom,

though constrained, stems from the view, that the complexity of the social world produces many and varied situations and outcomes that require new attitudes and practices or modifications to existing practices to be made by the individual. So by describing a system that generates a wide range of thoughts, perceptions and actions from which the individual is free to select while at the same time being subject to the constraints of the unconsciously held practices and dispositions that are legitimated and supported by the institutions of the field, Bourdieu asks observers to consider " the individual [as] a world within a world" (1990:56). This complex articulation of dispositions, which are both structured and structuring, is similar to Giddens' 'duality of structure' formulation (1984). Like Giddens, Bourdieu defends the difficulties in conceiving of such as mix of guidance and freedom as being the result of the pervasive and limiting effect of thinking in the old dualities of individual agent and structure.

Bourdieu's 'Fields' refer to the structured space of competition within which actors compete for control over the resources that are specific to that field. In the field of cultural production three forms of capital represent these resources: cultural capital, symbolic capital and economic capital. Cultural capital refers to non-financial resources resulting from the possession of cultural knowledge and skills. The nature of this cultural knowledge and skill is defined by its rejection of mainstream practices and products produced by the large-scale field. Symbolic capital is authority or prestige generated when economic capital is disavowed. Economic capital is access to finance and the control of assets that may be used to support the production and supply of goods. The nature of the field of cultural production lies in the distribution, control and interaction of these three resources. Bourdieu's theory of cultural production involves the operation of these three resources organised within two sub-fields defined by the contests for each form of capital those of restricted production and large scale production.

In the restricted production subfield (small-scale production) where artistic products are produced, competition is organised around the pursuit and use of cultural capital. In this field economic or market based concerns are explicitly rejected with target consumers being viewed as other producers, not the wider public. The competition in this field is over cultural legitimacy which can be destroyed if the producer attempts to accumulate economic rather than cultural

capital. This explains how large numbers of new producers with ideas but limited economic resources can enter the field of restricted production. However, the required disavowal of economic capital, does not mean that for the possessor of cultural capital economic *profit* is not obtainable in the long run. The rejection of economic capital generates honour and prestige, a name for oneself, which Bourdieu has termed symbolic capital. This symbolic capital can be converted, in the long term, into economic profit by using the accumulated symbolic capital to consecrate, or put their name to the objects and cultural movements. This consecration provides value to objects and the producers can thus claim some of the profits produced from the objects use, display, reproduction. Bourdieu's contention that greater overall economic profit is produced by the operation of symbolic, rather than economic capital, is based on the nature of the different markets (producers and public). Though smaller, competition within producer markets is guided by defined classifications and methods of judgement generated and agreed by the producers themselves. This is more stable than the operation of public mass markets that although in the short run can generate large amounts of economic profit, due to the dynamics of taste eventually produce losses when assets suddenly drop in value and new trends become difficult to discern. This leads Bourdieu to propose that producers who try to 'cash in' by converting their symbolic capital directly into economic profit by following the practices of large scale producers only experience short term benefits and would have been better off in the long run following the long termer term disavowal of the economic world.

The large scale mass production subfield is shaped by the contest for, and operation of, economic capital, with the public, non-producers of symbolic goods, being the intended market. Operating in this field involves the use of very limited amounts of cultural capital. It is defined by short-term profits and expensive product development practices that attempt to find the next best selling product. This intersection of cultural, symbolic and economic capital thus attempts to link the field of cultural production within political and economic systems and avoid the Parsonian separatism that influences some institutional or organisation centric accounts.

Although Bourdieu's conceptualisation of cultural production offers an, albeit complex, route through the unsatisfactory disconnect between the social and the economic, with an

operationalisation of production attuned to the cultural aspects of the product, there remain a number of drawbacks to the application of his thesis to that of popular music production. There is, unfortunately, little elaboration of the operation of the large-scale production field within which popular music production sits. In this, Bourdieu's delineation of cultural production into high art and middle and low-brow entertainment subfields, a hangover from early mass consumption theorists (see Adorno, 1941), is to blame. Favouring the examination of high art production, Bourdieu's contribution to the understanding of the organisation and articulation of current cultural production is restrictive and unsuited to the study of popular music. For example, Bourdieu's worked examples of theatre companies and publishing houses don't take into account the rise of large media conglomerates that use communications technology and international broadcasting and distribution deregulation to consecrate cultural product (Garnham, 1987), a facility he argued to be a quality of the restricted sub-field of high art production.

A further neglected opportunity lies in Bourdieu's limited use of the term cultural intermediaries. These individuals, critics and commentators mainly operating in the large-scale field of production, were positioned at the boundary between producers and consumers. This expanding class of individuals were described as involved in the presentation and representation of cultural producers (Bourdieu, 1984). Unfortunately the work of this group within cultural production is not brought into Bourdieu's later writings on cultural production (1993, 1996). This is disappointing as their function in shaping the value of cultural products (a consecrating act) is suggestive of a link between restrictive and large-scale production fields. If, as Negus (2002) proposes, we reposition the cultural intermediary as being between the writers and performers of cultural product and the audience or consumer, then we can avoid the economic determinism of production line views of the production and distribution of cultural product.

Bourdieu's formulation of fields and habitus, allied to the different dynamics between cultural symbolic and cultural capital, offers a depiction of the organisation of cultural production that, proponents argue, resists collapse into economic determinism or idealised notions of artistic institutions. Notably the formulation that agency was a function of an individual's position

rather than some inherent capacity. This is a liberating perspective, allowing for example, Bourdieu to ask: Who creates the creator? A question that avoids the blackboxing effect of using creativity as an input and is therefore useful for the purposes of this research. However the concepts of field and habitus and the conversion possibilities and barriers operative between cultural, economic and symbolic capital are complex and some writers have suggested that this is the reason for the limited take up of Bourdieu's conceptualisation by organisational sociologists (Dobbin, 2008). The contribution of Bourdieu's work to this study's objective is that it argues for a more networked and relational approach to the study of agency and organisation within cultural production. While I agree with this ambition, the split formulation between restricted and large field arenas of activity and the use of abstracted capital and cultural forces (with the attendant risks of collapsing back into socio-economic dualisms) however mediated by position within the network to explain their operation, limits its possible contribution to the aims of this research.

Bourdieu's division of large and restricted fields of cultural production is also challenged by what some writers identified as a shift away from vertically integrated mass production models towards Post-Fordist (Lash and Urry, 1987) flexibly specialised forms of organisation carried out within a network of smaller companies (Piore and Sabel, 1984). This perspective was driven by the increasingly fragmented nature of consumer markets identified in the cultural industry (Storper, 1989; Barnatt and Starkey, 1994; Scott, 1999a, 2002, 2004a). A perspective we will move onto consider.

1.5 A cultural industry production network

Flexible specialisation is a particular take on the industrial dualism of Post-Fordist conceptualisations of production (Piore and Sabel, 1984). Arguably it echoes the dualism present in the Production of Culture literature and Bourdieu's Fields of Cultural Production, where production was partitioned into mass appeal and niche markets. It has been used to

discuss the current form of film production, by theorists such as (Scott, 2002; 2004b), and that of popular music, (discussed later) by writers such as Hesmondhalgh (1996). The argument is that in volatile consumer markets, communication between customers and producers needs to be fast and frequent, and means and methods of production need to be able to reorganise and select different input resources and product development processes in order to respond accordingly to these changing tastes. Importantly, the variety of skills, assets and knowledge that this responsiveness requires were argued as not being able to be accommodated within the boundaries of a single firm. In a reworking of Bourdieu's notion of production and consumption having a homologous relationship, diverse and dynamic market preferences were viewed as needing diverse and dynamic forms of organisation, where firms specialised at particular activities are flexibly co-ordinated with a host of other specialised firms to form a production network. Competition within a system of flexibly specialised production, proponents argue (Piore and Sabel, 1984) is organised on the basis of value not cost, as the shifting and heterogenous nature of consumer demand reduces the organising dominance of economic capital and increases the importance of social capital and knowledge.

The important contribution of the role of knowledge in explanations for the organisation of post-industrial production and consumption systems (Bell, 1973) has been developed across a wide body of literature that includes management (e.g. Drucker, 1993; Nonaka and Takeuchi, 1995), economic geography (e.g. Lundvall, 1992, 1998; Feldman, 1994; Cooke, 2001), organisational studies (e.g. Grant, 1996; Spender, 1996), and information and communication studies (e.g. Castells, 1996). Indeed, knowledge economy reasoning was part of the rationale for the UK Creative Industries initiative and other international policy debates (OECD, 2001), where information or knowledge, its creation, exchange and distribution, was held to provide sources of economic value to national economies challenged by the lower, cost-based productivity of emerging economies. However the suitability of flexible specialisation and related knowledge economy perspectives to explain current cultural, as opposed to creative production (as defined earlier) is arguably overplayed, with dissenters pointing to the continued existence of oligopolies within the music, broadcast, film and media industries (Hesmondhalgh, 1996; Saundry, 1998). This observed failure of a flexibly specialised network of smaller firms to

replace the large vertically integrated firm appears to stem from the critical role played by finance and distribution in the cultural industries (Garnham, 1987; 2005; Askoy and Robins, 1992; Caves, 2000). The high costs and scale advantages associated with demand uncertainty, media and distributor channel negotiation, and low marginal production and distribution costs, allow large firms to maintain competitive power through the centralisation of finance and distribution assets. However the networked perspective of production should not be completely rejected because of the presence of large generalist organisations. For while economic capital continues to be powerful in the exploitation (promotion and distribution) of products, the content origination stage of the cultural production system is subject to features that support collaborative flexibly specialised networks. The demand for varied product, necessitating access to a range of cultural knowledge situated in informal social networks and the need to organise those resources flexibly, speaks to the value of moving away from a firm based organisational perspective on the organisation of cultural industries. A shift that while not replacing firms as the site of activity, at least includes the participation of a greater diversity of actors and modes of organisation such as self-employed individuals, smaller firms and temporary project based forms of organising (Grabher, 1993; 2001; 2002; 2004; DeFillippi and Arthur, 1998). It is thus an important step towards reaching a perspective suitable for the analysis of the creation of a particular cultural product that this research addresses.

This recognition of a more varied organisational ecology operating within the cultural industries was enhanced by economic and human geographers whose work identified what is an arguable source of cultural production specificity, the link between locally organised clusters of activity with global promotion and distribution chains (Rutten, 1991; Scott, 1999b; 2001; 2002; Pratt, 2008). To help map these distinct yet connected stages of production, Pratt elaborated a Cultural Industries Production System (1997, 2004c). Cultural products were produced by the operation of 6 moments covering inception to consumption. These were: 1) Content origination, or the generation of the creative material; 2) Manufacture, which refers to the creation of materials used to create the work and the prototypes which will act as the master from which copies will be reproduced; 3) Reproduction and promotion, which concerns the means by which copies are reproduced and delivered to the consumer; 4) Exchange, which includes the performance in a

public space such as a theatre and the retailing of the product; 5) Education and critique, referring to the way products are interpreted and validated; and 6) Archiving, the construction and use of 'libraries' of previously produced product. This is not intended to be a series or set of stages through which a product passes on its way to market. These moments within the system are perhaps better described as interpenetrative rather than interconnected, to better capture their mutually formative nature. Setting out these moments allows us, to consider more carefully, whether and what relations exist between say Content origination and Archiving, or Reproduction and Exchange, than that afforded by a 'transmission model' of production present in political economic treatments of cultural production and those of the production of culture theorists, where researchers are encouraged to frame the creation of cultural product and its mass distribution and consumption, as linear and sequential managed by gatekeepers taking stop/carry on decisions. This important criticism will be picked up in the next section when we apply the themes identified in the cultural production literature to the sector under review, the popular music industry.

In addition to a more linked and recursive conceptualisation of cultural production, the Cultural Industry Production System (CIPS) provides a welcome focus on the practices involved in cultural production, which, in contrast to more organisational forms of reference that place the firm before the practice, allow for a more detailed examination of the practices of cultural production. In later work, Pratt appeared to favour the term Cultural Production Chains as part of a reformulation of the Global Commodity Chain literature (Pratt, 2008). Although the ideas are similar, I prefer the term system or network than chain, as the later risks slipping back from the mutually recursive moments perspective of the CIPS, to a more linear chain of the transmission model of production.

Though the CIPS, or Cultural Industry Production Network offers a more diverse, mutually constitutive, framework against which to carry out the more empirical research that Miege (1987) argues is necessary to improve our understanding of cultural industries, how to analyse the network remains unresolved. This is because the conceptualisation of networked relationships that appears in the production of culture perspective and related sociological and

economic literature on the cultural industry, draws on a misreading of Granovetter's embeddedness concept (1985). By starting from abstractions of economy and society, Granovetter's thesis can appear to reinforce the separateness of the economic system, by describing how an economic system has embeddedness 'done' to it. In this way, as Pratt warns (2009), the social and the spatial are cast as context, a moderating environment on the operation of economic practices and individual interactions (e.g. Grabher, 2002). Or in other words, *what* gets done is determined by economic rationality and *how* things get done is driven by social conventions. This risks affirming the very dualism of economy and society that the embedded view of networked production systems was designed to resolve. The Parsonian legacy continues to impede our ability to investigate the practices involved in the creation of cultural product.

The argument being presented in this study is that we need a different starting point from which to address issues of cultural production. Rather than using stylised notions of market and economic capital moderated by social context we need to consider how the qualities of the product and therefore the organisation of its creation, reproduction, distribution and consumption (the market) are recursively organised to create the market (Callon, 1998; Callon et al., 2002). In this regard Polanyi's (1977) earlier conceptualisation of embeddedness represents a more fruitful point of departure. Polanyi's recommendation was to avoid starting with social or economic abstractions in order to develop a more fluid mixing of economic and social institutions at a fundamental level rather than a second order happening (Krippner, 2001). One approach to developing a more fluid perspective of the operation and formation of networks involves examining the network from *within* (Murdoch, 1995). Reconceptualising networks away from that of a connected series of a priori entities (organisations, actors, places, objects) moderated by the operation of immanent structuring relations or abstracted sources of capital, towards a more performative perspective where entities and powers are outcomes not starting positions (Callon, 1998; Latour, 2005). This is achieved by adjusting the starting point of analysis, framing the research around what is done, how relations, outcomes and actors are constructed through practice. I will elaborate the theoretical and methodological approach selected to do this in the following chapter. To complete the review of current analysis and to further demonstrate the value of adopting an alternative approach to the study of cultural

production networks such as the music industry, we need to consider how the sector is currently examined in more detail.

This begins with a look at how the product is discussed. Two things are achieved in doing this. First we can tackle some of the empirical features and definitions of the sector. Second by reflecting on how popular music is approached, we can begin to see the poverty of existing treatments of the product. Then we will develop the review by examining how the organisation of popular music production is explained and determine how these efforts illustrate the suggested drawbacks identified in the previous analysis of cultural industry research.

1.6 Popular music: the product

Popular music product is commonly analysed in two connected ways: how it is sold and how it can be recognised musically. The revenue streams generated by songs are: tickets and merchandise for live performance of the songs; the sale of recorded songs, in the form of CDs or music files (termed sound carriers); and the collection of royalties (publishing) for the broadcast and sale of the recording; and the use of the music score in other media (film and television) and by other performers (Hull, 2004). Live performances such as at concerts and festivals are usually managed by the artists' management company or personal manager and involve promoters, stage designers, booking agents, ticket sales tour logistics and merchandising. Though falling sales of recorded music and an increased demand for live music has encouraged record companies to redesign contracts (so called 360 degree contracts) to share in the proceeds from their artists' live performances. Publishing and recording are based around the exploitation of two types of intellectual property: the music and the sound recording. The music based copyright rests with the song in written form and is shared between the songwriter(s) and the publisher or the publishing division of the record company. The sound recording copyright is created when the song is recorded/produced and the rights are shared between the recording artists and the record company (Bagehot and Kanaar, 1998). Despite the fact that the publishing

sector has experienced an upturn through the increased number and range of media available to use a piece of music, and the value of the live performance has increased due to internationalised markets and merchandising opportunities, these revenue streams, while more valuable and increasing, remain dependent on the recorded song. This portrayal of popular music product as a legal form and economic good is reflected in analyses of how the industry is organised (something I will discuss in Section 1.8 of this chapter), and how the product is made (discussed in Section 1.9). Without condoning this view, we can, however, see that the subject of our research, the creation of musical product is, current debates over the decline of music product sales notwithstanding, of central importance.

The second way of defining popular music concerns its musical identity. Originally applied to a specific kind of music targeted at teenage consumers and distinguished from Rock 'n' roll, or Blues (Gammond, 1991), use of the term popular music is currently applied to a wide variety of musical styles. It is accordingly difficult to produce a precise definition for the term (Middleton, 1990). Musicological attempts to define popular music by instrumental, lyrical, tonal or melodic qualities are challenged by an ever evolving musical content and character that encompasses great variation and blended forms. The British government were faced with this difficulty when drawing up the Broadcasting Act of 1990, which conferred the granting of licenses to radio and other media organisations. This led to an entertaining series of exchanges in the Lords where members debated what was meant by popular music (Hansard, 1990:752-760). The resulting act settled on a broad definition: "'Pop music' includes Rock music and other kinds of modern popular music which are characterised by a strong rhythmic element and a reliance on electronic amplification for their performance" (Great Britain, 1990). Authoritative dictionaries such as The Penguin Encyclopaedia of Popular Music (Clarke, 1990) and The New Grove Dictionary of Music and Musicians (Sadie and Tyrell, 2001) adopt a similar line, noting the profusion of musical styles while avoiding a precise definition.

The instability of musicological definitions has led some music researchers to propose using a less judgemental, more quantitative standard, sales. In this way of thinking, popular music is not classified by the people who make, distribute or critique the music, but by the amount of

consumers who purchase it. Popular music in this perspective can be self-defining, it is music that is popular (Burnett, 1996). While this certainly has the advantage of avoiding prejudicial aesthetic judgments, and doesn't require the complex interpretative efforts of musicologists, it remains unsatisfactory. This is because the sales levels above which a product becomes popular music are necessarily arbitrary, and such a benchmark would in any case be unable to cope with the high failure rate of music (Burnett, 1992; Caves, 2000). The fast, and in some cases circular product life cycles would make classification by sales a confusing affair, as the term would have to be applied and reapplied as the music experienced differing sales levels over the years since its original appearance. This problem led the British Government to add to its definition, the coda, "(whether or not, in the case of any particular piece of Rock or other such music, the music in question enjoys a current popularity as measured by the number of recordings sold)" (Great Britain, 1990).

While a strictly quantitative approach is problematic, its focus on the circulation of the product points to perhaps the most salient feature of popular music, as being music that is developed for mass media channels (Denisoff, 1975; Toynbee, 2000). Popular music is designed for broadcast and is to a greater or lesser degree orientated towards making the returns necessary to continue that widespread distributional effort. This commercial or market orientation is often reflected in the standardised duration of a popular song to that of 3 to 4 minutes. Market based definitions do not however remove the ideological or expressive character of popular music. It is a cultural product, the creation and consumption of which helps writers, musical artists and consumers construct meaning and identity in a complex and contested world (Grossberg, 1997).

The way these definitional discussions are structured is worth noting. The features of popular music product, its qualities and status as a product, appear restrictively drawn around legal, economic and musicological attributes. The argument has not been built yet, but we can see at this point that another quality, omitted from consideration, is worthy of inclusion. Music product is made of, and experienced as, sound - waves of air pressure. Including this key attribute in our examination of popular music offers new ways of conceptualising the production of musical product. For viewing musical product through its sound qualities will allow us to shed light not

only on how it is made, but also how these qualities of sound are shared during the reproduction and consumption of the song.

1.7 The popular music production network

The apparent variety of products that underpins these difficulties of classification has been variously explained as a function of the low barriers of entry (Caves, 2000), the result of more competitive market structures (Christopherson and Storper, 1989), and by others as evidence of the increasing differentiation of cultural preference that characterises late forms of capitalism (Lash and Urry, 1987; Scott, 2000; 2001). Set against these product diversity narratives is the recognition that sales are highly skewed towards a comparatively few artists (Hamlen, 1991; Kretschmer et al., 1999; Strobl and Tucker, 2000). The chart system of weekly best sellers plays an important role in encouraging sales concentration. In what is an indication of the value of considering cultural production from the suggested economy of qualities perspective where product features and values are constructed within the network (Callon, 1998; Callon et al., 2002), the charts indicate the value of, or in Bourdieu's terms, consecrate, the musical product. Usually explained by social contagion theory, where a product's value is said to increase with the level of its demand, the chart system can accelerate the sales of songs that have received initial market interest (Rosen, 1981; Burt, 1987; Cox et al., 1995; Kretschmer et al., 1999). The existence of a winner takes all dynamic in the cultural industries such as popular music (Caves, 2000), has encouraged analysis and explanation to focus on the activities and organisation of distribution and promotion. Distribution and promotion supported by access to economic capital is viewed as the difference between success and failure. The sales dominance of large record companies distinguished by their substantial financial resources used to support costly distribution and promotional campaigns is used to legitimise this perspective and consequent analytical selectivity.

Understanding of the relationship between how the product is produced and the activities of mass reproduction, distribution and consumption is limited by this selectivity. Though early writers identified the tendency of producers to mimic successful products, accounts of how this is achieved are thin. Sociological institutionalist explanations on the formation of music genre (e.g. Anand and Peterson, 2000) are aimed (not surprisingly) at the institutionalisation of musical forms at an industry level, and are not applied to the practices of production at product level. Similarly, the informational resources provided by the chart system are treated as data of objective value used within a rational choice decision making process carried out when selecting new artists to sign. Chart data is viewed in terms of input decisions, record companies through an agency of talent spotters termed artist and repertoire people (A&R), use chart information to select new artist signings (Ryan and Peterson, 1982; Burnett, 1996). Using a mixture of local buzz within the creative ecology of music performance venues and chart information, A&R agents spot bands and artists with similar features to currently successful acts. Record company strategies are thus described in terms of artist selection, distribution and promotion, not product creation. The organisation of the content generation stage of the cultural industries production system (Pratt, 1997), despite involving a complex set of interconnected practices that shape and enable mass reproduction, distribution and live performance, remains under-examined and consequently, underestimated.

The creation of musical product, usually set within accounts of the emergence of musical genres or movements, has however figured in studies of music cultures (e.g. Bennett, 1999, 2001). In these historical and descriptive reports, music is an expression of wider socio-cultural and political trends within which the mystique of the gifted star plays a prominent role (e.g. Sullivan, 2001; Harris, 2006; Heylin, 2007). Content origination within a cultural industry production network, the process by which a song is created and recorded has received far less attention. There is a recognition that it takes place within "networks of creativity" (Leyshon, 2001:61), locally situated in cultural production filieres or milieu cultures, made up of musical knowledge, skills, performance venues, and recording studios (Scott, 1999a; Power and Hallencreutz, 2002; Webb, 2007). This spatial turn within network views of production is reflected in analyses on the importance of proximity to musical creativity (Leyshon et al., 1995),

the reflexive relationship between production and consumption (Lovering, 1998) and the distinct institutional mix of particular places such as Miami (Curtis and Rose, 2003) Seattle (Bell, 1998) and Manchester (Haslam, 1999). However the precise way these networks of creativity are articulated to produce the music product, the recorded song, is less well described. Explanations often reproduce the socially mediated operation of the context of a creative milieu on the activities of economic agents argument, which was previously identified as being part of the production of culture perspective.

Two pieces of research have tackled the creation of music product from a more detailed, empirical, perspective: Ruth Finnegan (1989) and Sarah Cohen's (1991) studies of music making in Milton Keynes and Liverpool respectively. In these accounts the importance of local social and cultural networks were traced during the progress of two music bands as they tried to succeed in the music industry. However their contribution is restricted by their limited coverage of music production practices. Finnegan's research subjects were "toward the amateur and part-time end of the spectrum" (189:278) and Cohen's were unsuccessful in winning the support of a record company. Therefore, these accounts do not include those of a commercial recording studio and the process of translating the band's music into a recorded product. Furthermore, Cohen's (1991) depiction of a band's experience of rehearsal rooms, promoting agents and record companies, while grounded in the experiences of her research subjects, was dominated by an art versus commerce duality (Stratton, 1982). The value of this oppositional framework to the creation and distribution of music has been challenged by Frith (1991) who by, pointing to the commercial orientation of all record companies and artists, cast the dualism as a "cliché" (1991:106). Finnegan's study (1989) did reveal the importance of listening to other bands' recordings on the musical development of the musicians she was studying. The desire to imitate appears to provide support for the sociological institutionalist perspective that pursuit of legitimacy guided the actions of artists. In addition, the use of musical genre conventions to help structure creativity through interpretation and experimentation identified in these studies, provides an interesting, less essentialist, view of musical creativity. However, although grounded in a practice-based accounts of music creation, the effect of employing wider structuring dynamics, such as an art/commerce dichotomy and social legitimacy, prevents

detailed examination of the rich interactions between the actors, objects, and practices involved. This, plus the limited career progress made by the research subjects of these studies, reduces the contribution of this work to our present research inquiry, understanding how music is produced.

1.8 Organising the popular music industry: majors, independents and projects

The influence of the production of culture perspective and other socio-economic formulations of human activity is visible in the frequently adopted problematisation of record production as being structured according to the interplay of the different strategies of two record company organisational forms: the majors and the independents (Negus, 1998; Hesmondhalgh, 1999). The majors (Sony, Warner, EMI, and Universal) have around three quarters of total market share of songs, a large repertoire of artists, and extensive economic resources. Independent record companies are classified in opposition to the majors, as smaller firms with narrower repertoires and constrained economic capital but greater amounts of cultural and symbolic capital. Though described as independents, the links between the two forms are various and frequent including joint ventures, part equity stakes and alliances (Negus, 1999b; Gander and Rieple, 2002). The existence and strategies of these two forms are variously explained using economically grounded resource based view theory from within strategic management (Gander, Rieple and Haberberg, 2007), transaction cost economics (Gander and Rieple, 2004) and sociological institutionalist perspectives (Hesmondhalgh, 1999, Negus, 1999a). The rationale offered for these inter-firm transactions draws on abstracted depictions of the separate worlds of economic and social forces and resources (capital) that we saw in the production of culture perspective and Bourdieu's fields of production. Major record companies possess economic resources able to support the distribution and promotion of songs whose low unit price require widespread distribution to cover product creation and promotion investments (Caves, 2000). The majors need to control the large scale and scope of their activities results in a bureaucratic administrative structure. Independents, smaller and administratively looser

organisations, are more deeply embedded in the creative cultural networks operating at urbanised local levels (Curtis and Rose, 1983; Robb, 2006) and can thus more easily identify new talent (Frith, 1990). The organisational distance created by the alliance formation, enabling the suggested inimical cultural and economic resources (Bourdieu, 1993) to be combined without either being somehow degraded (Hesmondhalgh, 1998, 1999; Gander, et al., 2007). The overarching view is one of a coupling of economic and socio-cultural resources and structuring relations.

The result of this orientation is the transmission narrative of cultural production, where a local-global pipeline is provided by record companies to connect artists with musical qualities that have been consecrated by the chart system, to the market (Hirsch, 1972; 2000; Gereffi, 1994). In this sense products are not really produced, they are a result of a process of filtering, operated by a series of gatekeepers. In the process, how the product is created is dropped from view in favour of a focus on the stop/go decisions of gatekeepers working for the recording company A&R departments, distribution and promotion agencies. I will discuss this disappearing act in the following section. First a word on project based organising.

Though much analysis of the music industry is viewed through the prism of inter-firm relations (major/independent) there has been some use of non-firm perspectives. Lorenzen and Frederiksen (2005) for example recognised the value of adopting project-based view to the analysis of music production. They portrayed the recording of music, the process by which a music commodity is formed, as being organised within a project described as involving the financial resources of the record company, the production skills and knowledge of record producers, a team of sound engineers, equipment, the recording spaces of a studio and musical and artistic talent of the musicians (Lorenzen and Frederiksen; 2005). However, recognition of the importance of project based organising, while a necessary step in the objective of explaining the popular music industry, needs to be treated with caution. For it depends on how one understands a project. A project within this literature is defined as an organisational form that "involves the introduction of boundaries, boundaries in time and in space, boundaries in terms of task, boundaries regarding who is to be involved" (Lundin and Soderholm, 1995:453). This

flexibility does help guard against the danger of blackboxing organising by imputing determining objectives and dispositions as can happen when considering organising of networks from a firm centric perspective (Grabher, 2001). However the recording project should not be regarded as simply a meeting point for resources of the network. If we begin the investigation of networks by regarding the resources and relations involved as preformed, then we reduce the value of a relational network perspective and risk slipping back to assumptions on the hidden hand of macro-structuring forces. To position the recording studio as the space within which the producer attempts to reconcile the competing and diverse nature of immanent socio-economic structures is to risk recreating the economised, technological or socio-structural depictions that have so far resulted in stylised accounts of cultural industry production systems that blackbox the creation of music product. This argument is elaborated further by considering the uses of technological and copyright based arguments within the music industry.

1.9 Explaining away the recording project: copyrights and technologies

When the practices of product creation are considered in research on the music industry, the relationships involved and the organisation of decision-making and judgements on quality that take place are often subsumed into that of a contractual issue. The contract between the record company and the artist, while playing a role in shaping the organisation of music production network and notionally conferring decision-making power onto record label representatives, does not however, replace a detailed analysis of how the recording project is organised and decisions on product qualities during its construction are taken. Contracts are only one source of power. Viewing product creation as a contractual matter can prevent understanding of how the product is created, what qualities it is inscribed with, and its relationship to other moments in the CIPN. The copyrights attached to the recorded song are indeed part of the process of commodifying the music, of creating a product that can be exchanged in a market (Kretschmer and Pratt, 2009). The study of how they are exchanged and

exploited are thus an important element in understanding the configuration of music industry production and consumption practices. However musical products are more than a system of associated rights, they carry sound and musical qualities that also enable the recorded song to be a market suitable product. The position of this study is that while contract and copyright are indeed important in an explanation for how music is created and the network organised (Frith, 2000; Towse, 2001; Tschmuck, 2009) we must guard against reducing the music industry to their operation. A brief outline of copyright practices is necessary at this point.

The contractual relationships between artists and record companies over sound recording copyrights are highlighted by Lash and Urry (1994) to support their position that cultural industries are defined by the exchange of property rights for investments in product development and distribution activities. As Kretschmer et al., (1999) point out, while the copyright is conferred on the authors and performers, it doesn't stay there for long. The publishing rights to the song are sold or shared with a publishing company who will promote the music and work with the collecting societies to collect royalties on the use of a song in a recording (mechanical royalty) or the performance or broadcast of a song. Copyrights are transferred or licensed to record companies in order to use the firm's logistical and promotional skills to market the recording. In the music industry the rate can vary between 12-14% for new artists, 15-16% for established artists and 18-20% for superstar artist (Halloran, 2001; Passman, 2004). The musicians' payments on records sold, are set against the costs of recording and promotion, and so the authors of the sound recording do not receive any fees until these costs are recouped (Hull, 2004). The terms of such agreements vary tremendously with sliding scales depending on number of sales reached and exclusivity contracts covering a certain number of albums, and are clearly subject to the asymmetrical bargaining power between artist and record company (Boon et al., 1996; Kretschmer, 1999). So while copyright is enshrined as a protector of authorship and an incentive to creators, the costs of reaching the market and the need to absorb losses from unpredictable sales performances mean that property rights are subject to contractual terms between parties of differing power that result in the vast majority of creators seeing little financial reward from the institution of copyright (Bettig, 1996; Towse, 2001). The maintenance of this system depends on the largely unexamined faith in the motivation of artists

being economic (Bettig, 1996), the lobbying of the International Federation of Phonographic Industries (IFPI) organisation supported by the large record companies, and the preservation of the property discourse surrounding music product.

Two points are important when considering popular music copyright institutions. Firstly, that the classical origins of copyrights do not match the more collaborative practices of popular music with its wide array of session musicians, band members, engineers and producers (Toynbee, 2004). Authorship is narrowly defined by reference to the musical score even though popular music songs are the result of collaborative performance and experimentation that extend beyond the songwriters' scores. Also the performance of the music, the way the instruments are played, is granted a lower status than that of the songwriting despite the importance of the sound qualities and performance abilities to the perceived value of the work (Bently, 2009). Copyright-based views of the 'work' do not therefore capture the creation process or ingredients of the recorded song. Secondly, there are also interesting issues raised by the existence of moral rights, which in contrast to property rights cannot be exchanged (Rushton, 2004). The moral right of authors to be associated with their work can be viewed as a kind of symbolic capital, which following Bourdieu's argument, may be able to generate long-term economic profit for the owner. The reputational benefits of being known for creating, or taking part in the creation of a commercially successful or culturally valued product, may also increase the value of the artist or producer's contribution, leading to higher royalty percentages in future projects or just a more regular supply of job offers.

While copyright is correctly recognised as playing a constructive role in the commodification of musical knowledge and performance, its role is as a secondary fixative, creating an object from the work of the creators. This is different from the human/material processes of product creation and leaves an important question unanswered. What practices and organisation of people and materials (e.g. sound recording equipment, artists, producers and studio rooms) enable the music to reach a form that is not only ready to be fixed as a tradable commodity (copyright) but also one that displays particular qualities that will enable and support its distribution, promotion, and consumption? Furthermore, because copyright exchange is held to be the key characteristic

of the relationship between artists and funding record there is also a danger that the management of this relationship is reduced to a contractual one, obscuring the way relations between artists, producers and record labels interact and co-ordinate the music creation process. Copyright institutions do not therefore represent or fully explain the practices of product creation.

Explanations of the role of technological innovations in the music production network have a similar masking effect on the music creation process. Technology is often treated in explanations for the organisation of the music industry as a separate entity, a resource with a dynamic, mainly economically articulated, of its own (e.g. Goodwin, 1988; Colonna et al., 1993). In this line of reasoning the trajectory of music technology is described in terms of cost. As the costs of recording and distributing music have decreased, music production has moved from a vertically organised system organised by a few large companies towards a more disaggregated network where low barriers of entry allow a greater number of people to record and distribute music (Alexander, 1994; Shuker, 1994; Warner, 2003). And indeed, technological developments were a key part of the reasoning behind the creative industries policy formulation (Garnham, 2005). However, this positioning of technology as a cost reducing actor that has structural effects on the industry (e.g. Jones, 2002) gives it at once a too great a role and a too simple one. Technology is not some structuring force operating *on* a system of production and consumption but part of a network that is organised to create relational effects (Clegg, 1989; Law, 1994). Technology is more usefully approached as "a set of procedures, a definition of the relevant problems and of the specific knowledge related to their solution" (Dosi, 1982:148). Viewed this way, the process of music recording can move from being one involving the *capture* of musical expression in a form that can be mass reproduced, toward a perspective where the product is *created* during the recording process. There are examples of this more constitutive role of technology within music production and recording, however they are restricted to a discussion of the casual link between technology and musical genre developments (e.g. Théberge, 1997), rather than to the organisation of people and practices in the network of relations that produce, reproduce and consume music product. Treating technology and social structures as stylised formulations of economic power or social and cultural capital risks

concealing the part played by production practices in the formation of musical product and their relationship to the operation of the production and consumption network as a whole.

Conclusion

This chapter began by proposing that research into how musical product (the recorded song) is created is poorly understood. To demonstrate this omission I reviewed culture industry literature tracing its development from political economic origins through production of culture perspectives and Bourdieu's formulation of Fields of Production. During the analysis I suggested that the idiosyncratic and complex multifaceted definition of culture industries, that draws on creativity, symbolic use, intellectual property and mass production contained a tension between economic and socio-cultural institutions that is not resolved by the mediating accommodation reached in the production of culture literature, nor completely settled by Bourdieu's more networked formulation of cultural production. The use of socio-economic abstractions to inform analysis of cultural production networks similarly weakened literature specifically aimed at the popular music industry. Here institutional logics were reified into two organisational types, supported by an overemphasis on contractual relations, the structuring power of copyright and a narrow, economic treatment of technological advances. A transmission model of production results, which views production as a matter of artist selection, contractual power and distributional resources. In this formulation of production, the activities of product creation, are, in the process, explained away and the opportunity to develop a more mutually constitutive analysis of cultural production along the lines of the CIPS is missed.

Though progress can be made by recognising the importance of project based organising, this promise is threatened by the continuing use of abstracted socio-cultural and economic structures. What is needed to provide an explanation for how music product is produced, and what role it plays in the operation of the entire production and consumption network (as described by the CIPS), is a theoretical and methodological perspective that can avoid slipping

back into stylised accounts of organisation and power drawn from assumptions on the existence and operation of socio-cultural and economic structures. We need to move from structural explanations towards the action of music production, if we are to understand what music product is and how it is made. By tracing the actions of protagonists involved in the creation of musical products we can problematise musical production, reveal how it is organised and question the qualities of musical product and its status as an object within the music industry, beyond that which generates revenue. Entering the black box of music production will allow us to challenge the transmission perspective of cultural production and reconceptualise the relationship between the creation of musical product, its reproduction and consumption.

In the next chapter I will introduce the approach selected to achieve this, actor-network theory (ANT). ANT's performative perspective will allow us to avoid the metanarratives of capital power, technology and talent that have obscured important questions surrounding the creation of musical product and the status of the song as a product within the network of popular music production, reproduction and consumption. The study of music production that will follow the use of an ANT informed analysis will be one in which the protagonists' identity role and power are not assumed, where their practices are not organised by wider structural forces concretised in organisational institutions and where the status and characteristics of the song as a product are not taken for granted. The proposition that will emerge is that music production is an aligned assembly of people, practices, objects and interests organised around the construction of relationally produced sound and musical performance qualities. By following the construction of a recorded song, I will build an argument where the song is revealed as not simply an object constructed through production practice, but an actor network, a circulating set of interests, representations and systems of calculation that performs the production and consumption system itself.

Before we can analyse this proposition, the epistemological and ontological perspective of ANT requires investigation and elaboration. However, fittingly for a perspective that eschews the role of abstract forces, ANT is more effectively explained by applying it to a specific empirical setting. Sensitising ANT to the investigation of music production in this way will allow me to

discuss how the research was conducted, and what methods of data generation were followed. The next chapter will therefore weave together a number of tasks. I will briefly set out the key features of ANT and then, to illustrate the value of its use and the position of this research, bring analysis of the existing literature on the music industry to a sharper focus onto the treatment of production practices.

Chapter 2

Actor-Networks and Music Production: A relational perspective

Introduction

The obstacle facing studies into the organisation of music production is that its precise articulation, the manner in which the various elements are organised and activities practiced, can disappear from view. They are obscured by reified notions of an 'industry' or 'sector' made up of self-evident relationships between actors (organisations and individuals) and organised according to defined roles and structural powers that considers production as an input/output process, policed by gatekeepers. It is starting from these a priori positions that has contributed to what I regard as a partial and unsatisfactory explanation for the organisation of the music production network, and the creation and status of musical product. This research seeks to redress this state of affairs.

Actor network theory is among a body of work (Foucault, 1975; Dreyfus, 1991; Deleuze and Guttari, 2004) that view entities not as things with determining powers, but as relationally produced outcomes that are continually reproduced (Clegg, 1989). This orientation is similar to non-representational theory in the way it moves attention away from the study of the organisation of people, actions and objects as they appear, towards the study of how these observed events, subjects, buildings, systems of judgement, knowledge and power relations, came to be (Thrift, 1997; 2007). It is thus not a study of organising within a production system; it is the study of how the organising practices and power relations *per*form the production system that enables their operation. Power, in this relational, constructed sense, is a practice not

a position (Pratt, 1997:129), a consequence not a cause of action (Latour, 1986:264). The advantage of this orientation lies in its ability to analyse production networks without the blackboxing effect (Latour, 1987; 1999a) of using taken for granted assumptions on the calculative or creative agency of individuals, the organisation of a market, the impact of technology or the nature of cultural products. In this way new insights on the relational ordering of production networks, such as the popular music industry, can be achieved (McLean and Hassard, 2004).

A move that is critical to this objective of conceptualising music production as involving performative rather than simply connective relations is the reformulation of the term 'cultural intermediary' originally introduced by Bourdieu (1984). Observing the uncertain value of cultural products due to their lack of objective functional attributes, Bourdieu identified the need to inscribe the products with qualities by which they could be valued and judged. In so doing critics, commentators and promoters were described as mediating between production and consumption. Negus (2002) extended the role of the cultural intermediary to one of a connector between the artist and the consumer, thus including all the processes and personnel involved in the processes of production: the creation of a product, its reproduction, distribution and sale. In terms of the music industry this means the record producers, engineers, studios, A&R (artist and repertoire) agents of the record label, and the reproduction, distribution and promotion tasks. Negus' (2002) reformulation of cultural intermediaries did not stop at their repositioning. Adopting a cultures of production view (Du Gay, 1997) that builds on Bourdieu's notion of fields of practice and disposition, Negus considered how intermediaries did more than simply mediate between existing worlds of creation and consumption.

In a study of rap music (1999b) he identified how record company organisational practices were shaped by the cultural attitudes and creation routines of African-American artists. The use of Africa-American divisions within music companies or licensing relationships with independent record labels allowed the major record companies to distance themselves from the authentic production spaces and practices of Rap. In this way the promotional departments of the majors were able to construct product qualities around cultural values such as the 'myth of the

street' (1999b:500), while applying economic capital and bureaucratic administrative skills to the product's production and distribution. In this reading, cultural intermediaries were both formed by creation practices and formative of consumption and valuation judgements. In an early use of actor-network theorising, Hennion's paper on recording studios and record producers drew on this constructive view of cultural intermediaries when suggesting that the record producer took on the role of the intended audience in the decisions taken over the production of the recorded song (1989). Hennion (1989) and Negus' characterisation (2002) of cultural intermediaries challenge the transmission model of the production of culture, pointing to its more interconnected and mutually constructed nature. This research explores the significance of this formative view of the relations of creation, production and consumption, by taking a more detailed practice based approach than Hennion, and a performative network based view, rather than an organisationally focussed one, as with Negus (2002). In so doing a more detailed understanding of the role of recording projects, obscured by organisation centric accounts, can be traced and the formative linkages between production and consumption can be highlighted and examined. Using an actor-network perspective, sensitive to project based organising, allows network relations to be approached, not simply from a transactional perspective where quantity and cost are traced, but from a transformative perspective where the interaction of people, materials and interpretations are organised to construct resources, identities, practices and outcomes.

This chapter will critically introduce and examine actor-network based reasoning, and consider its potential contribution to the study of popular music production. This will be followed by a discussion of the design of the research and the methodological approaches taken to generate and interpret the data collected.

2.1 Actor-network theory

ANT's conceptualisation of power as an outcome, the result of particular modes of organising, draws on Foucault's formulation of productive or disciplinary power (1975, 1982). Rejecting the view that power is directed "unilaterally in the form of will" (Peltonen and Tikkanen, 2005:275), Foucault proposed that power is achieved through the creation of roles and identities for people, through engaging them in practices and forms of knowledge, such that they become subjects of power (Foucault, 1982). A striking example of this subjectification of the human is contained in Foucault's portrayal of the recruitment of the built environment to the assignment of roles and the recruitment of people in the maintenance of their status (1975). The use of prison walls and the construction of clear lines of sight, from prison employees to the prisoners, produced a dynamic of self-governance. Prisoners observed their own behaviour and regulated it according to the knowledge-based spatial position in which they were located. The contribution of architecture to the generation of subjects, in a reversal of the 'form follows function' dictum (Kornberger and Clegg, 2004) is a valuable insight and has been applied to studies of organisational spaces such as shopping centres (Abaza, 2001), factories (Miller and O'Leary, 2002) and research laboratories (Hillier, 1996). However indebtedness to Foucault's productive power concept does not mean that ANT can be subsumed into Foucault's work. Foucault's notion of distributed capillaries of power (1980) is restrictive, as it makes it difficult to analyse the uneven distribution of power that characterises systems of production and organisation (Law, 1991). Concepts and methodological approaches developed within ANT such as convergence and irreversibilisation, translation, centres of calculation, heterogeneous assemblages and a distinction between actant and actor (Callon, 1986; Latour, 1987; Law, 1992), enable researchers to focus and develop a clearer explanation picture of how power is performed and production organised (Peltonnen and Tikkanen, 2005).

To operationalise this relational ontology, actor-network authors collapse the distinction between agent and structure into a notion of agency as a property of a network, and view this network in terms of the outcomes it produces. The use of the term 'actor-network' carrying, as it does, alternative definitions and usages has led to some difficulties, and in retrospect Latour

wishes he had employed an alternative term to describe the approach (1999b). However, there are, as Czarniawska observes, 'no innocent terms' (2004:782), and much of the difficulty in following a relational ontological position is the discomfort produced from going against the centuries old Cartesian dualism of subject and object, the mind observing the material. This difficulty is evident when writers, referencing the relational position of say Granovetter (1985) during their project based explanations of music production, appear to slip back into treating relations as connective and not performative (e.g. Gulati, 1999; 2000). For example, Callon notes that the social capital literature (e.g. Burt, 1992) used in studies of networks is actually a Trojan horse, which by portraying social capital as a resource travelling down relations to agents "splits the agent-network…by introducing the usual opposition between action and the resources of that action." (Callon, 1998:12). Actor-network theory helps guard against this danger and the difficulties of conceptualising a relational perspective using terms used by non-relational approaches are a price worth paying.

Key to an understanding of actor-networks and of how agency is produced and reproduced lies in acknowledging their heterogeneous nature. Actor-networks, or rather actor-networking, in order to stress their relational generation and continual reproduction, are composed of human and non-human objects aligned in discursive practices. This symmetrical anthropology (Latour, 1993) draws on the "material practice" of the social and economic (Pratt, 2000:435), the observation that action and interpretation take place somewhere, sometime, with some things and some people. The actor is therefore the effect produced by a network, a hybrid assemblage of people, knowledge, buildings and spaces, technical and natural objects, texts, practices (including measurement metrics) and systems of judgement (Latour, 1988, 2005; Woolgar, 1991). This distinguishes ANT from social network analysis and organisational studies' usage of networked organising. Networks are not viewed as webs of connected nodes, where study is made of the things exchanged between the points, but as work-nets (Latour, 2005) or action-nets (Czarniawska, 2004) where attention is placed on how things become (powers, roles, entities). The network in ANT usage performs it doesn't simply connect. It constructs, not links. The process by which this heterogeneous performative network is woven into a stable and repeating alignment of interests, practices and outcomes is described as one of translation (Callon, 1986).

Translation, because the actor-network is not simply composed of a chain of pre-existing entities and practices, rather it involves their transformation both in terms of meaning and practice, defined and organised in ways to support a particular interest, a particular outcome.

Translation involves a number of achievements: problematisation, 'interessement', enrolment and mobilisation. Problematisation refers to the definition or redefinition of a system, a product or process as a problem to which particular actors are the solution. The acceptance of this schema involves making their participation a necessary, indispensable element. These actors become an obligatory passage point (OPP), "you cannot succeed without going through me" (Callon and Latour, 1981:279), through which the network flows. 'Interessement' takes its name from the interposition of calculating devices and systems of judgement, objects and people between the various actors who circulate through the OPP. These interventions align or enrol the redefined entities in practices and interpretations that produce the power and interests of those actors at the OPP. In this way power is differentially distributed, with certain agents being more powerful than others. Critical to the enrolment of hybrid actors is the creation of regimes of calculation, based in particular spaces or centres of calculation that define and organise participants in the network through establishing qualities, ways of measuring that don't just describe, but inscribe people, practices and objects with the interests of the network (Latour and Woolgar, 1986; Latour, 1987; Woolgar, 1993). Measurement is therefore not neutrally representational, it performs (O'Connell, 1993). Using this performative perspective actor-network approaches are able to include the notion of a calculating agent. Conceptualising agency as a hybrid human/material assembly, or operating with constructed notions of quality, not the atomised, efficiency maximising variety depicted in classical economics.

To emphasise the importance of recognising that markets or production networks can only exist if the qualities of transactions and interactions have been constructed and shared across different spaces and categories of action, Callon and Law (2005) propose using the term 'qualculation', from Cochoy (2008:24). The term highlights the necessary combination of calculation and quality judgement that an organised market requires. Importantly, this generation and distribution of qualities across a network of different spatially, materially and temporally

situated activities and interactions, is not trivial (Callon and Law, 2005). Product and process qualities are not read across from some objective set of quality standards, but engineered and performed in interpenetratively linked heterogenous networks. The importance of systems of calculation and quality construction to the disciplining of the network, through the circulation of measurement metrics that support particular ways of judging and assessing quality, is one of the ways the ordering narrative of a particular actor-network can act at a distance (Law, 1986). The final stage of translation, mobilisation, refers to the point at which the actor-network has become an actor, a heterogeneous network whose interests are co-ordinated, practices aligned and whose 'nature' and operation has become self-evident. At this stage the network has become normalised and its performed nature obscured by reference to self-evident facts and the operation of the 'laws' of the market (Callon, 1998; Callon et al., 2002).

2.2 Agency and actor-networks

Actor-network approaches to the analysis of organised activity are an evolving body of diverse work that has attracted criticism (e.g. Collins and Yearley, 1992; McLean and Hassard, 2004) and self-criticism on the tendency to over-endow the agency of network builders (Law, 1999, Law and Hassard, 1999). However discomfort by early actor-network theorists over the term actor-network theory, "there are four things that do not work with actor-network theory, the word actor, the word network, the word theory and the hyphen!" (Latour, 1999b:15), though later retracted (Latour: 2005), is a necessary and generative one. Problems over the terms used illustrate the challenge and importance of the relational ontology of actor-network approaches. Actor and network are "intentionally oxymoronic" (Law, 1999:5) they highlight the tension between structure and agent, and the importance, if one is to avoid the reductive explanations that follow, of not collapsing one into the other. The challenge of maintaining this tension while crafting explanations drawn from a relational ontology is why actor-network theorists have developed such a profusion of terms (for some a confusion) to articulate and examine the complex performative relations of an actor-network. Actor-network terms are thus a necessary

evil, whose contribution to the examination of organising outweighs any clumsiness or difficulty of use.

The charge that the symmetry of human/non-human in the construction of hybrid actors opens the door for objects to have a determining role in human behaviour (Grint and Woolgar, 1997) has also produced a significant debate (see Pickering, 1992). However this misreads the inter-connective conceptualisation of materials and people, where in a situated and embodied view of people and practice, people and objects aren't conceived as separate entities or events and therefore don't have power *over*, but through each other (Harman, 2002; 2005). In contrast to intersubjective positions on the construction of meaning, ANT has evolved a material semiotic perspective, where hybrid (human/non-human) actors perform the organisation of people and practice (Akrich and Latour, 1992; Law, 2009). This does not however remove the key role of human agents within these relational bonds. ANT continues to give the human an essential role in the construction and operation of networks, just not an independent one.

This position on agency can be described by regarding actors as having two interconnected and constitutive dimensions: relational and material (Law, 1991). Actors are characterised by relational strategies, interests that are created and achieved through the assembly of materials, bodies, texts, systems of calculation, technical and natural objects. This heterogeneous association of people, things and practices is not inherently stable, it is a circulating relational entity requiring continual repetition and re-enactment for its appearance as a self-evident phenomena to be maintained. The process of translation involves the 'framing' of individual agents or groups of people as performing distinct roles within the network. Framing also applies to the definition of the product and its qualities that are being produced (Callon, 1998). The framing of people and products is essential feature of a market or production network, as it proscribes the remit of action and actor, enabling the regimes of calculation to be followed, and in so doing creating and maintaining the interests of the actor-network. Without clear definitional roles and accepted product qualities giving identity and the means of calculation and management, the network would collapse as roles and practices shifted, rival actor-networks intervened and alternative product qualities emerged. Framing is preserved by the circulation of

what Latour refers to as immutable mobiles (1987). Immutable mobiles are texts, objects, systems of calculation, and people, that don't change as they circulate through the network. Immutable mobiles hold their shape physically and spatially as well as relationally, in that they maintain the network of relations that constitute the actor-network (Law and Singleton, 2005). Immutable mobiles play an important part in holding the network together and allowing the actor-network to work at a distance, disciplining the participants according to its interests. Changes to this flow and thus the location and nature of agency of the network, can be described using the concepts of overflowing and irreversibility (Callon, 1991; 1998).

At each point of the framed actor-network, the heterogeneous actors, people, technical objects, systems of measurement, spaces of action, are connected to other networks. As Callon notes, while framing puts the brackets round the outside world, as 'other', it doesn't abolish it (Callon, 1998:249). People, materials, spaces and practices involved in a particular actor-network are also, simultaneously members of other actor-networks. People are part of different professional bodies and socio-cultural networks, systems of measurement are discussed, technical objects are developed by other actor-networks, and the space of action, the physical layout of people and their routines are used for other tasks, by different actors. At these points of connection there may be an accidental or intentional 'overflowing', a transfer of ideas, materials, people and systems of measurement from one actor-network to another (Callon, 2007). The effect of such overflows is dependent on the mutability of the actants, the hybrid associations of human/material practices. This feature is described in terms of reversibility.

Reversibility refers to the possibility of de-convergence, and a realignment of the multiple actors within the network. Can interventions be made in the relations between hybrid actors, decisions reversed, associative links undone and new problematisations created? The durability or reversibility of actor-networks is not determined by the characteristics of particular human/material associations, regimes of calculation or types of spatial and material disciplining. Overflowing, followed by a reworking of the actor-network associations and interests can happen at any point and involve any particular combination of associations. That said, one general point can be made, the more numerous and heterogeneous the interrelations of the

network, the more resistant to change it is (Callon, 1998). For in such a highly convergent actor-network, the translation process would require the rejection of normalised standards and a co-ordinated realignment of multiple actors within the network (Callon, 1991).

Beyond this proposition, actor-network theory does not attempt to identify general patterns and abstract forces that might account for when overflowing leads to the modification of an actor-network. This is a consequence of assuming a radical indeterminacy (Callon, 1999:181) of actors. From such a position it follows that there are no predetermined dynamics, dispositions, or wider structuring force that could be used to produce a general theory of action. If markets are made, actors assembled, and interests aligned, explanations for the construction or reconstruction of actor-networks must be grounded in empirical accounts of particular case studies (Law, 2009). Thus we have wide range of empirical accounts covering case studies on fishing (Callon, 1986), agriculture (Higgins and Kitto, 2004) political organisations (Routledge et al., 2007), infrastructure development (Akrich, 1992) health and medicine (Mol and Law, 1994; Callon and Rabeharisoa, 2003; Law and Singleton, 2005), information technology (Bloomfield, 1991; Bloomfield and Verdubakis, 1994; Lanzara and Morner, 2005) transport (Latour, 1996), and accounting (Briers and Chua, 2001).

The empirically grounded nature of actor-networking makes describing its approach in the abstract, difficult. Interests need to be identified specific to the actor-network being analysed, hybrid human/material associations need to be carefully traced and the ways translation is achieved requires specific examples of problematisation, enrolment and systems of calculation. Agency though distributed through the actor-network is unequally apportioned, and empirical examples are needed if such actors with more power are to be identified. Similarly the power to not participate in an actor-network and to reframe the heterogeneous associations that constitute and from it, also benefit from examples drawn from research. The contingent and empirically dependent analytical contribution of actor-network informed studies can disappoint some readers looking for generalised determining features for the way production systems are organised and organise. However, large-scale claims are often reached through reductive reasoning and the use of unproblematised entities such as markets and organisations whose

operation is regarded as self-evident and whose status is taken for granted. The view of this study is that actor-network theorising is a valuable corrective to such tendencies (as identified within existing studies of music production), and offers a range of concepts with which to examine and unpack the messy, performative practice of human/material relations that make our world (Law, 2004). Now we have introduced ANT we can better summarise the argument of this thesis and discuss how we will be utilising the perspective in this study of the creation of music product.

2.3 Actor-networking and music production: sensitising the study

The creation of musical product, the recorded song, takes place within what Leyshon (2001) has termed a creativity network which is part of the music production system made up of networks of reproduction, distribution, promotion and exchange. This is organised in a temporary recording project involving recording studios, engineers, studio owners, artists, A&R representatives and record producers (Lorenzen and Frederiksen, 2005). However, understanding of what goes on in this network is either obscured by a continued bias towards consumption orientated explanations on the production of culture (Pratt, 2004c) concealed by an over-application of firm based forms of organising (e.g. Huygens et al., 2001) or reduced to rather deterministic accounts of the artistic talents of the participants and the properties of recording and production technologies (e.g. Warner, 2003). As a result, accounts of the creation of musical product are set within a transmission model of cultural production. A linear set of stages where the product is connected to the market (Hirsch, 1972; 2000). The picture that emerges of the recording project and the 'place' of recording, the studio, is one of a necessary but essentially passive part of a music production nexus. It's a space whose identity, nature and participation in the organisation of the production of music are determined, the result of the strategies of record companies and artists, changes in musical tastes or the development of sound recording technologies.

Aside from the fact that no detailed analysis of the practices that take place in the recording project exist to support this depiction, this view fails to take the production of products for what it is, the construction of qualities and means of valuation and measurement (Callon et al., 2002). Commoditisation of products, let alone cultural ones such as music, involve the construction and distribution of agreed qualities, otherwise practitioners would have no means by which to evaluate their results and consumers no way of arriving at a consumption decision (Callon, 1998). Moreover, in contrast to the transmission view of cultural production, these qualities cannot be arrived at separately to the interests of distribution, promotion and exchange. The practices of the recording project require, for a market to function, inter-connective constructive relationships with other elements of the production and consumption network. It is in this regard that sound as a product quality, enrolling the protagonists in performative relations that construct the roles of producer, artist and studio will be an important element in the argument developed by this research.

This requirement of markets to be organised around agreed qualities is missed in treatments of the role of technological objects in the recording process. Objects such as musical instruments and sound recording equipment and software play an important role in the qualities of the recorded song (Toynbee, 2000). However they cannot be said to act. Technologically deterministic arguments have an answer for this, cost based rationality (Alexander, 1994). Technological objects enable actions to be performed more quickly or more cheaply and thus, following economistic arguments on the interpretation and action of people can be said to guide behaviour (Colonna et al., 1993). However in addition to the reductive characterisation of people as ‘homo economici’ (as an a-historical reality) what of the qualities of the product? Cost isn’t the sole determining feature of any product, especially for cultural ones lacking functional attributes. A more interesting question is how technological objects are enrolled in the performance of particular product qualities.

Technologically determined explanations of the record process are also selective in the material objects discussed. What of the physical layout of the studio, the organisation and design of the performance and recording rooms? Objects also include naturally occurring ones. What of

sound? What role does it play in the organisation of practices that result in a record? The point is to include the material world, broader than just technological objects, in the analysis of the construction of product qualities that help guide recording practices within an inter-connective network of production and consumption.

Another determining agent invoked in the explanation of what happens in the recording project, is the creative disposition of artists (McFadzean, 2000). As with technology, creativity and experimentation play an important role in the construction of musical product. Indeed Hennion's study of the recording studio suggested that the studio was equivalent to a laboratory in that the isolation created by the physical infrastructure enabled experimentation, cultural rather than scientific (1989). This draws on essentialist notions of creativity as being a human trait, a naturally occurring trait located in the self (Storr, 1972). Although this assumption is admittedly more attractive than the homo economicus version of humanity, it similarly overplays the nature of human agency. Creativity is more than a psychological feature; it is materially situated within a system of production and consumption. It takes place somewhere, at particular times, using some things. In cultural industries with highly variable creation practices a more valuable question on creativity is designed through the use of an actor-network perspective. How is creativity produced? Or in Bourdieu's terms: "Who created the creators?" (1993b:139). What forms of creativity are encouraged and supported in order to establish product qualities that would enable the commoditisation of the result?

The blackboxing effect of using the 'creativity as human condition' assumption is seen in explanations of the role of the studio as an instrument with the record producer as its player (e.g. Moorefield, 2005). By comparing the studio to an instrument, played by the producer, the actions and interests of this important actor within the recording network can be subsumed within the creativity paradigm. The transmission model of cultural production has the investor, the record label, using contractual power to select which results of the creative process are taken on and reproduced, distributed and promoted in a unidirectional manner. This is a simplification of the relationship between the creation of the product and its distribution and sale. How can record labels evaluate the record and make the judgement to release or not without a set of

agreed product qualities and creative practices within which to measure the value of the song? The error, as argued by Frith, (1992), is in viewing music as the starting point and describing production and distribution as things that happen *to* it (1992:50). Instead, music is a set of product qualities constructed through an inter-connective network of production and consumption. If we adopt the former position the analysis of the role of the record producer in the construction and performance of particular product qualities is obscured and we are left with the art/commerce duality that many cultural industry writers acknowledge is an unsatisfactory and crude simplification of the complex interactions involved in the creation and production of musical product (Frith and Horne, 1987; Frith, 1991; Negus, 1995; 1998)

2.4 Following the actors: identifying a point of view

Actor-network theory can best be represented as an approach or at most a procedure, rather than a methodology. In place of rules and stages, there are suggestions and principles. Instead of systematised series of data generating steps and analytical stages, researchers are encouraged to view ANT as a guidebook (but not a cookbook), offering ways and places to look. The aim in avoiding methodological accounts that risk appearing prescriptive stems from one of the principles of the ANT project, that power involves representation. That one of the methods of achieving representation includes the creation of forms of measurement and classification that benefit particular actors at the expense of others. There is an equivalent danger that detailed prescriptions of an ANT research method would perform a similar representational turn and that research that followed the recipe could, in Latour's words, confuse the map with the territory over which it is placed (2005:17). The dangers of methodological maps does not of course prevent ANT research from offering procedural guidance which, in the last analysis, may be summarised by the dictum 'follow the actors' (Latour, 2005). Or in other words to begin by identifying the actors (both human and material) and, by identifying what they do, how they do it, and with whom or what they do it, trace their associations until an organising entity emerges, the actor-network. In order to explain

how the actor-network of music production is performed I needed to identify and trace the relations between, and assemblies of, the people, texts, physical spaces, technical and natural objects, that bring the recording studio, and the practice of music recording into being.

From earlier studies I had conducted on the music industry (Gander and Rieple, 2002, 2004; Gander, et al., 2007), a reading of the literature on music production (Chanan, 1995; Théberge, 1997; Howard, 2004) and from published accounts of making records (Massey, 2000; Cogan and Clark, 2003; Simons, 2004; Harris, 2006; Goldman, 2006), I identified the self-described actors involved. The artists who write or at least perform the song, the management representatives of recording studios, artists and producers who organise the resources and scheduling of the project, and the engineers and producers who operate the recording equipment and prepare the song for reproduction. Of course, I did not take these identities, resources or objects for granted, they were conditional entities that were to be analysed by tracing the performative relations that construct them.

However, networks even when studied from within, through a tracing of the associations between the various human material actors contains a challenge that requires careful selection of the framed set of activities that make up the actor-network. This is because studying an actor risks separating them from their performative relations, and there is a danger of sliding back to abstracted or atomised notions of people activities and things. While texts and money leave traces that can be analysed, technical artefacts do not speak and people, even if they are willing to grant access to their activities, are numerous and highly mobile. Furthermore on what basis do we select these intermediaries? If we are guided by a ‘follow the actor’ or ‘follow the intermediary’ research protocol, how were these to be selected? Which elements do we rule out? In a relational world, research runs the risk of attempting to study everything (Button, 1993; McLean and Hassard, 2004). The danger is that when attempting to follow the actors and trace their associations we risk becoming lost in a complex web of relations which, as they are open involve lots of sub-branches and links to other networks. The task of tracing an actor-network is thus daunting. It is precisely this problem that prompts many social scientists to use a priori reasoning to produce fixed identities and entities that may be more easily pinned down and

examined. Yet while understandable (one has to start somewhere), this is dangerous as it risks obscuring more than it reveals. It is this that has led, ANT theorists argue, to the relative neglect of the ways in which power is constructed. Researchers preferring to infer or accept given power sources in order to move on and study a particular socio-economic practice. A situation I have argued is present in analysis of the music industry.

The strategy I will use to respond to these challenges is to consider the performance of the network from a particular point in the network through which the actors and objects circulate. In this way we can use the constructive and performative properties of such a site to anchor the research and provide, what Latour has termed, an *oligoptical* or focussed account (2005:181). This defined point from which views of the connected whole can be traced will be the recording studio. The virtue of this constraining device is to dissuade the researcher from adopting, at first instance, more panoramic vantage points. For the disadvantage of panoramas is that they generate cohesion, producing global totalities that encourage similarly global explanations based on notions of immutable structuring forces such as notions of 'technology' or 'markets' 'competition' or 'society'. Such tools of explanation come pre-loaded with mechanics of power and thus work against more critical research efforts whose objective is to analyse how power is achieved. The recording studio is a promising site for study not only due to its oligoptical properties but also because its character, form and identity are currently being contested. Famous recording studios are closing, spaces (or more accurately practices) called project studios are emerging and competences previously practiced within recording studios are now carried out in portable software packages. This time of struggle can be described as a 'hot situation' (Callon, 1998) when the roles, identities, practices and narratives of ordering become controversial, less stable and therefore more visible to the participants and the researcher. In such moments, the tendency of convergent networks to conceal the nature of their heterogeneous assemblages behind apparently bounded entities and self-reinforcing logics of capital or technology is weakened. During this time research subjects are more able to reflect on their participation in the network and insights into how the actor-network is organised and sustained can be generated.

2.5 Designing the data assembly method: interviews and observations

Actor-network research includes a variety of data collection methods. Early studies in actor-network research were ethnographic in design (e.g. Law and Williams 1982; Latour, 1986; 1987), an approach that continues to be used (e.g. Hernes, 2005). Case study approaches (Yin, 1984; Verschuren, 2003) using in-depth semi-structured interviews and material analysis (texts, objects) have also been used to trace the associations and interest aligning enrolment of the participants (e.g. Mol and Law, 1994; Bradshaw, 2001; Cloke and Jones, 2001; Lowe, 2001; Law and Singleton, 2005; Lindahl, 2005).

This research follows the latter, case study based, approach. Using the studio as a point from which to trace participants and the flow of associations, actors were identified and interviewed. The 'hot' nature of the recording project where overflows were challenging the existing problematisation and interest convergence of the actor-network meant that interview subjects were able to reflect on their role and practice. The practice of music recording has, through the controversies of studio closures, software based recording and the reduced revenues produced by the increase in file sharing music sites, become less of a case of self-evident organising logic. In this context relationships and practices are being questioned, and interests being revealed as conflicting. Semi-structured interviews provided experiences of the subject in the recording network and interpretations on their role and contribution. In this respect the epistemological position of this research is similar to symbolic interactionism (Blumer, 1969). The meanings that people attach to their actions, and the material objects they interact with, reveal the construction of the interests and enrolments that organise and rationalise the actor-network. However human interpretations are not sufficient on their own to account for the human/ material agency proposed by actor-network theory.

To identify the constitution of the heterogeneous actor-network, observations of subjects during their practice were also carried out. This combined approach was necessary as although interviews can provide an understanding of the studio space and what actions and decisions

people take in it, the non-verbal relations between engineer, producer and artists may not be identified during interview, actions may not be described in the actual order or even missed out, and the interactions between people and the objects of the studio may not be communicated during recollection. Observations of recording sessions, artist performances and mixing sessions allowed the identification of object/human interactions. These involved the recording and reproduction equipment; editing software; sound effect modules; CDs; and the micro-geography (the listening, evaluating and performing spaces) of the studio. Observations therefore gave a material setting for comparison with accounts of recording practice provided during interview. Conversations accompanying the recording process were noted and the stages and interactions could be compared against interview rendered accounts. The combined interview and observation method enabled a fuller participant list to be identified and a more human/material conceptualisation of practice and agency to be developed.

2.6 Data collection: arriving at the 'sample'

Initially, I decided to assemble data using a critical case sampling approach (Patton, 2002). A case where the expertise of the protagonists was especially clear and thus the practices involved seen as especially relevant. I planned to study the creation of a hit song (Top 40) using a sample of all those individuals and studios involved in the making of a specific record. I used Billboard charts of records during 2007 to identify producers and artists and drew up a list of possible contacts. From information in the music press (NME, The Word, Sound on Sound) I was able to identify the recording studio(s) used during the recording project. Engineers were less visible and the plan was to begin with the producers and recording studios, and then ask who had engineered and represented the studio during the project. That left the artists. Although I realised that obtaining interviews with charting artists might be difficult, I hoped the fact that I had already interviewed the producer, engineer and studio representatives would help convince the artist of my interest and they might agree to interview on the basis of the logic of coherence.

It would, I hoped, make sense to them if someone were tracking the people and places where their successful record had been created.

Using publicly available trade directories (The Unsigned Guide, 2008; Music Week, 2007; Showcase International - online) containing producer contact and management representative information I began attempting to gain access to the producers on my list. Letters and emails were sent outlining the research and the project based approach and follow up phone calls were made. This effort met with some obstacles. The producers were either too busy to respond to direct requests and management firms who represented the producers were unsympathetic to the principle of gathering personnel from a particular project. Producers are peripatetic, self-employed people who moved from studio to studio often at short notice. Without secretarial support or a fixed place of work it was difficult to establish a place and time to meet. In addition as they were self-employed they were well aware of the opportunity cost of talking to me. As one producer I contacted made clear during attempts to arrange a mutually convenient time and place when he said: *"No offence but if I have to choose between work that will pay me and talking to you then I am going to do the work."* Requests to management companies for interviews with specific people came across as unreasonable and unrealistic and were often met with 'he is working on a project at the moment try again in a month.' Additionally, the identification of particular producers I wished to interview, meant that in some cases I rejected offers to interview other producers on the producer management's roster, or the producer managers themselves ruled out interviewing others as it didn't fit with the record based rationale I had outlined when initiating the contact. During conversations with management representatives they were pessimistic of my being able to contact the entire project personnel, and especially so when it became clear that I wished to interview the artists. The idea of following the actors involved in a particular project had a kind of neat justification to it, but did not reflect the lifestyles and attitudes of people in the music-recording sector. It is important when attempting to gain access to a select group to demonstrate an understanding of the working patterns and constraints of those involved in the target sector. This, I was failing to signal, further reducing the willingness of gatekeepers to support my requests for access.

I also realised, and this was corroborated in interviews I carried out later, that requests to interview specific personnel involved in a hit record had the feel of journalism to it. Journalists also cited specific records and sometimes asked to interview 'the man behind the music', or the producer. The possibility that comments made on the experience of working with particular artists during the making of the record could be used in an unfavourable way represented a significant risk to the producer and his management company. The image of artists is carefully controlled by record companies and anything negative appearing to come from the producer interview risked damaging this and therefore reducing the willingness of artists or record company to work with them in the future. One interviewee spoke of being 'burned' by a journalist who had written a piece that damaged the working relationship of the producer and artist involved. Avoiding making what could be viewed as critical comments on fellow members of the recording community is especially important where project based organising is prevalent and decisions are made on the members of the project using judgements drawn from the reputation of people rather than independently derived views from, say, job interviews. The peripatetic nature of producers and the journalistic feel of my approach meant that a different tack had to be taken.

I decided to use a less restrictive sampling method, relaxing the requirement that all individuals had to have worked together on a particular project. On reflection, the use of such a critical incident type sampling frame did not fit the case under study. The making of a song that charted is not an indication of an especially revealing occurrence. On the contrary, as proposed by the theoretical position used in the formulation of the research enquiry, the recording of songs are highly repeated performances of convergent practices. It is not a particular project that needs to be explained but the ordering of the network as a whole. It is more appropriate then to select according to role within the network and gradually construct up a body of data that explains how this durability is achieved. I reformulated the approach along theoretical sampling guidelines using Bauer and Aarts' (2000:32) interpretation of sampling as one of 'corpus construction' based on systematising the saturation principle (Glaser and Strauss, 1967).

Following this approach, I began as before with the self-descriptions of protagonists (producer managers, producers, engineers, artists and studio managers) that previous research and a reading of published material provided. In addition I carried out a pilot interview during which I tried out the formulation of planned questions and elicited details on the practices and people that were involved in the recording project. Following some adjustments, interviews were then carried out with these actors in order to establish a range of views, practices and beliefs on the relationships involved and the guiding logics that help order the recording music network. These were elicited through a narrative style interview questions and follow up queries. Once transcribed, these were coded in a grounded theory approach using Atlas.ti software until theories on the ways in which the performance of the recording studio and wider recording network is enacted began to emerge (Glaser and Strauss, 1967; Glaser, 1992; Charmaz, 2006). Interviews were sought from actors across the different roles with an emphasis on exploring how common the views were and whether, and how they differed. Through this stepwise coding-interview reflection process I grew more sensitive to issues of discipline and performance, of the issue of decision reversibility, the use of space within the studio, the importance and qualities of sound and the fragmentation of the studio and the recording network.

The structure of the interview (narratives of making a record) did not fundamentally change during the research. The emerging explanations for how the recording process was performed were pursued during the interviews using follow up questions around the narrative accounts given by actors during the interview. For example the prompt, “what can’t you do?” made during the account of an artist’s experience of performing in the studio, tested, or rather offered an opportunity to describe, how they were disciplined by the setting and relationships that had been established during the recording. I also used follow up questions drawn from previous interviews, asking for example about the red light in the studio (discipline), the way they described sound during discussions over the mix (metaphors for sound qualities), the use of stems (packages of sound files) as reversible decision making devices and their attitude to symbolic credits (naming the contribution of the studio, engineers) on the record sleeve. The later point led me to conduct some research at the British Library Sound Archive to determine

whether studio credits were being used and to look up Internet music distributers (iTunes, Spotify) to see whether the credit made it online. Inspecting the sleeves of top 10 selling singles for the period 1980 to the present revealed a very incomplete account of studio involvement. Even when cross referencing the singles with albums that contained the song, studios were not identified on over half of the sampled records/CDs. iTunes and Spotify do not carry studio details.

One question that I gradually introduced to the interview did not fit alongside the narrative accounts of the experience of recording. Interest in the structuring properties of sound led me to ask artists and producers about their experience of playing or recreating sound in a live setting. Part of a developing theory was that decisions made in the studio were circulating and enrolling the live performance of the music thus fixing the importance of the producer in the music industry as a whole. Asking producers and artists about performing live allowed the important relationship between recorded sound and performed sound on a stage to be analysed. The categories of actors interviewed didn't change during the interview-code-interview process. Producers, engineers, artists and studio managers remained at the heart of the developing 'sample' frame. Through the system of rolling recommendations and direct appeals, I adjusted my requests to interview different actors depending on whether the coding practice was allowing for new insights or had begun to repeat and mainly confirm the views of others and support my emerging theories on the ordering of record production.

Using a rolling system of requests to build a corpus while reflecting the difficulty of access wasn't the most efficient way of approaching data collection. This is because one of the features of record production is that actors perform different roles on different projects. Studio managers can become engineers, artists can be producers and producers can be remixers. This led to interviews intended to be with a producer turning out to be with an actor who mainly performed engineering roles. This wasn't entirely unwelcome as the multiple roles of those who are engaged in the recording network was one of the important features of the study, however it was also responsible for extending the sample beyond the number strictly necessary to examine the emerging themes.

The interviews conducted thus maintained the logic of the principle of oligoptica: collect and observe practices and interpretations of those actors engaged at a critical point in the network, the studio. A few deviations from this rationale were sparked by the accounts given in the interviews. The dominance of musical software in studio practice accounts led me to interview a manager involved in the distribution and design of such software and other recording equipment. Descriptions of sound and recording equipment sometimes went beyond my understanding gained from reading technology guides as part of my preparation for the interviews (White, 2000; Menasche, 2002; Holmes, 2006). An interview with a BBC Sound Engineer, who had experience of performing in a studio as an artist, was mainly conducted in order to develop a greater appreciation and understanding of the technical elements of sound, recording and broadcasting. Comments made about the disaggregated nature of recording and music production had taken me towards interviews with project studio owners and I also sought an interview with one of the few Internet based recording and production operations. Modelled on crowd sourcing principles these sites host the exchange of recorded tracks and mixing requests in order to allow people to build up a song from the selected parts. However although this is an interesting development, it is very recent one, and use of such sites is extremely limited. Other than offering a glimpse of a possible (rival) future, it made little contribution to the study of how the UK recording network is organised. That said their presence is revealing and their interpretation of the way in which music could be made was relevant for the study. The development of these aggregating sites would make an interesting subject for a future study, once such operations have more than a couple of years of experience behind them. I also carried out two interviews with record label managers. These were partly to check whether, during their accounts of recording and constructing musical product any alternative practices, key decisions or even critical actors not generated from the interviews with the studio actors, were identifiable. This was not the case. Accounts reflected the same themes, and echoed the descriptions of the management of the recording project already generated. This increased my confidence that the boundaries of the data collection were appropriately drawn.

This more gradual stepwise approach also helped increase the chances of obtaining access. It allowed me to stress the academic nature of the enquiry, as it was clearer that I was interested in

actors as professionals, as people with valuable views drawn from their entire career rather than participants in the success of an artist's record. This was more effective in terms of data collection, as it broadened (at least initially) the number of actors I could attempt to gain access to. The reformulation had produced a more coherent fit between my research enquiry and sample design and had moderated some of the data access difficulties. Further reflection on the challenges of gaining access, including the difficulty of obtaining the support of gatekeepers and the interest of the producers and studios, led me to reconsider the character and elite status of the proposed interviewees.

2.7 The challenge of interviewing creative elites

The special challenges of research that involves interviewing elite individuals have been considered in political and organisational studies (Richards, 1996; Welch et al., 2002). Elite individuals are defined as having more resources (money, knowledge, status) than others in the population. Such a relative classification is of course rather slippery, and, outside household names, is very open to challenge. However, the difficulty of establishing who is elite and who is not notwithstanding, it is important to consider the differences in power in society and sectors of social activity when conducting interview-based research. The common line of argument adopted by those writers encouraging this perspective (Aberbach and Rockman, 2002; Delaney, 2007) is that the power of subjects is seldom considered in methodology texts and there appears to be a bias in social science towards investigations of those without influence, over those who have it (Odendahl and Shaw, 2001). There are, of course good reasons why research is skewed away from the powerful; they operate in exclusive spaces, are surrounded by managers who can operate as gatekeepers, and are subject to many appeals for their time and advice. Such features require a slightly different approach to the negotiation, design and collection of interview data.

Producers, engineers and artists fall into this elite interviewee category. They operate in exclusive spaces (recording studios) that are not open to the public, and rarely have direct

contact details that are publicly available. Access requires going through their management companies and asking them to forward the request for interview. To add to this barrier their mobility and working patterns of intense periods of activity, often late at night, make contacting them difficult. Recording studio owners and managers, and producer/artist managers, as they are anchored to one site, follow office hours and have a public contact point are slightly easier to obtain access to. These difficulties of access may be one reason why there have been comparatively few studies on music production, and even fewer based on interview data from actors within the recording studio. The recognition that some of the interviewees contacted would share characteristics of elite interviewees changed my approach to obtaining access, and helped inform my attitude when conducting the interview.

One important change was to seek to enhance my status and stress the professional level of the research, something regarded as necessary or at least helpful, when attempting to gain access to elite individuals (Odenhahl and Shaw, 2001). I am a Senior Lecturer at Kingston University, and so when attempting to gain professional endorsement with the APRS (Association of Professional Recording Services), I stressed my professional status and achievements. I cited my job title, length of time studying the music industry and my published research. I continued this approach when contacting potential interviewees, using letter headed paper for initial correspondence and handing over my business card when we met. The APRS agreed to endorse my research and this gave me permission to use their name in the contact letter as well as their membership lists of producers and recording studios.

I began to contact producers and recording studios using the APRS membership list and the chart based data I had drawn up previously. Though this endorsement did not dramatically increase my success rate, it did give me a start. From there I asked interviewees at the end of the interview if they had anyone they could recommend me to. I usually got two or three possible contacts of which one would result in an interview. This rolling approach was necessary as access was improved when I could use the name of a friend or someone they had worked with. It established credibility and helped reassure them that the interview wouldn't be a problem. The use of recommendations to build up a corpus of data contains the risk of being led to

interviewees with little contribution to make. However being able to say, “Can you put me in touch with people who have experience of working in a recording studio?” did reduce this risk, as the interviewees would relatively easily be able to select someone appropriate.

Access was not, then, a stage that I tackled, but a continually negotiated process that extended throughout the research process. The result is, as McDowell (1998) proposes, a lot messier than is suggested by many of the accounts of sample selection and access that are published in academic journals. For example, the use of rolling recommendations, while necessary in gaining access, did lead, on reflection, to a certain amount of duplication. I could have stopped interviewing recording studio managers earlier than I did, as although I felt I had reached saturation in terms of the views and explanations that were being delivered, I didn’t want to turn down a recommendation to interview them as this always led to the possibility of a further recommendation to a producer or artist where I had not reached saturation level. Also, as I discovered conducting the research, the job titles of many participants in the recording performance were mixed and variable. People described as studio managers were also engineers, engineers were also producers, and producers were also artists. Relying on APRS membership lists or the label given by an interviewee who was making the recommendation to decide whether to interview the subject was, I realised, unwise. So notwithstanding the saturation principle of sampling, the multiple identities and mixed practices of actors within the recording studio further emphasised to me that a priori sampling approaches were unsuitable. Under these conditions the corpus construction process was necessarily messy and perhaps inefficient, but effective.

2.8 Interview questions

The original intention was to follow narrative interviewing principles (Bruner, 1987) where interviewees were to be asked to recount events in their life (the making of albums) without interruption from the interviewer. However, this was unrealistic as during the pilot

interview the producer jumped around, moving from example to example rather than sticking within one event series as the strict interpretation of narrative interviewing technique proposes. I could have insisted on keeping to one specific event but this would have made the interview feel a bit hostile and restrictive, and would probably reduce the views and information given during the interview. Given this, a more mixed version of semi-structured interviewing, the episodic interview (Flick, 2000; 2006) was considered to be most appropriate. Rather than attempting to enforce a single narrative I would allow the subject to elaborate on particular episodes drawn from their experience. Then bring the interview back and ask for accounts of the next or another feature of the recording process. This more flexible approach was more comfortable for the interviewees and had the advantage of allowing me to access what Tulving (1972) termed their episodic knowledge, by asking supplementary questions associated to particular aspects of the recording process without fear that I was compromising the narrative. This made the interview more natural, a particular problem with narrative method (Bauer, 1996), and offered space for more general and conceptual knowledge, experience and ways of thinking to be accessed.

The interview began by my reinforcing the offer of confidentiality, establishing my credentials and stressing that I am interested in their experiences and views of what they do.

The following interview questions acted as a guide.

1. Bibliographic details: name/age/nationality/history

   Rationale: To collect information on the interviewee to enable different types to be identified and test whether views and experiences differed across the emerging corpus.

2. Could you describe what you are?

   Rationale: Avoid using the given identities of producer, engineer, etc., to reveal possible different identities and views of the different roles within the recording project. Follow up questions depended on the answer, but were intended to clarify the self-description and to identify differences between themselves and others either within the categories they used (such as producer), or in broader terms on their contribution to the making of the recording.

3a. How do you go about making a record? Can you take me through it from the beginning? How does it start? (Producers, Engineers, Artists)

3b. How are you involved in the making of a record? (Recording studio managers and Producer and Artist managers)

Rationale: Generate accounts of their experiences of the recording process. This goes though several stages (not necessarily in the order shown below) and sets of tasks. Artists, song writers, producers and engineers as well as studio assistants and managers can all respond to this question and focus on different elements.

- Writing of the lyrics and music
- The initiation of the recording project, negotiation of contracts or terms of payment, selection of personnel and materials and the selection of the studio and negotiation of fees
- Pre-production discussions on the sounds and musical ideas of the artists, record labels, and producers
- Setting up the artists, instruments and recording equipment
- Delivering and managing the musical performances
- Multitrack recording of the different instruments
- Editing and changing the sound character of the recorded tracks
- Mixing of the different tracks to form an organised song
- Discussion and agreement of sound effects, song arrangement and mix
- Mastering the song before sending to the CD manufacturer, distribution and broadcasting firms
- Post session actions: remixing requests, establishing credits for contribution on the recording and receipt of payment
- Performing the song live

Follow up questions asked for elaboration. Inviting descriptions of specific examples and trying to concentrate the accounts to what they did, how things happened, what and how decisions were made.

4. What's important to get right? Why?

5. What can go wrong? Why?

   Rationale: These questions are intended to encourage elaboration if the above question has not been answered in detail. They also generated data on subject's beliefs about particular practices and their role in them.

6. How would you describe sound quality?

   Rationale: This question was difficult to pose and I preferred to listen for when or if the subject made reference to sound quality in some sense. The question encourages a consideration of quality and invariably generates comments about competing qualities within the recording process. Follow-up questions involved exploring what sound was, how it was treated, discussed, described, judged and controlled.

7. How has the way you operate changed since you started?

   Rationale: This question was mostly superfluous as subjects usually set what they did in the subject of change, as expected from the 'hot' situation approach. However it also acted as a way of drawing the interview to a close and encouraging subjects to think about future projects and ways of working.

The above questions worked well for studio managers with small adjustments. The biography question included a request for an account of the history of the studio and how it was built. The follow up questions on how the studio contributes to making the record included requests to describe and explain the benefits of each room (live or studio control room). I also asked for a tour of the studio and used this to sketch a floor plan.

2.9 Conducting the interviews

Once access had been obtained, interviewing the various actors was a very enjoyable and rewarding experience. Perhaps unused to interviews that didn't focus on named artists and instead centred on their practice and views, the great majority were open and reflective, giving detailed descriptions of their activities, and how they viewed them. However there were times

during some of the early interviews and in one interview in particular, where the interviewee became less responsive. Reading the transcripts of these interviews, two things struck me and helped moderate how I conducted future interviews.

As proposed earlier, the advantage of interviewing people whose working life is subject to change is that respondents are more likely to be reflecting on what they do and how they do it, rather than viewing their role in unproblematic terms. In this way the chance of identifying and analysing what may, in other times, be blackboxed, is increased. However there are emotional consequences of being in this 'hot' situation (Callon, 1998). Some of the interviewees were under a bit of stress. Asking studio managers or engineers that have not had a good year and are struggling to describe what they do and what is important to get right, can spark a negative response, as it asks them to focus on periods of pain or disappointment. The studio manager watching falling booking fees and usage rates, the engineer who operates as a producer but watches artists get the producer credit and the producer seeing his work remixed before it is released, all, at times, exhibited a little stress when asked to discuss these topics. At these moments it was important to signal empathy and understanding. I sometimes was so concerned to avoid leading the interview that I may have seemed unsympathetic. It is not, of course possible to be neutral, and my earlier efforts to be so, only made me seem disconnected and less easy to talk to. Being aware of this danger and pondering Dexter's advice to "establish neutrality on the interviewee's side" (1970:32), my interview technique became more relaxed and better able to navigate these moments.

Secondly, interviewing people who work in the creative industries carries a particular challenge: the self-certification as creative and a celebration of being different or unconventional. In one interview the interviewee appeared to sense that I was looking for patterns and actively resisted *"being put in a box"* as he described it. This may have been a poor day for me but it also illustrated one of the characteristics of people who work in the creative sector; a casting of what they do as talent that is not explainable and that one shouldn't try to. Further, that creative projects need to be flexible to respond to different project needs and changing tastes and values. In this poorly handled interview, my questions on 'What is important to get right?' and 'What

can go wrong?' the respondent began repeating the phrase, *"that it all depends"* and *"there isn't a formula"*. This experience reminded me of the importance of the need to appear completely open and, as advised for interviewing elites, adopt an empathetic stance. That when interviewing creatives the interviewer has a narrow margin for error on the danger of appearing to look for patterns and in annoying the interviewee making them feel that you don't understand their world and that consequently the interview is even more of a waste of their time.

A total of 54 interviews were conducted (67:13 *hrs*) and 4 observation sessions of recording, performing and mixing sessions were carried out (11:30 *hrs*).

2.10 Determining saturation

The research objective was to re-conceptualise the transformation of the musical ideas of artists into a commercial product suitable for distribution, broadcast and exchange. The research site of the recording studio was selected as point from which to trace how the relations and associations were organised to enable the idea-product transformation. The actors within the studio were identified and interviews carried out. On reviewing the transcripts I began coding according to actor accounts of what they did within the recording network. From accounts of how projects were established the kind of decisions taken and the places and process of making those initialisation decisions, through to the practices and spaces involved in recording performances, the judgements and decisions over what sound qualities were desirable, the mix or organisation of the individual tracks into a coherent song and the practices involved in mastering the song for broadcast or mass manufacture. Using the relational perspective of actor-network theory, a number of explanations for the way music production network is performed began to emerge and are outlined below:

1. The studio is a centre of calculation, a space that allows decisions to be made about the musical performance, the song, the sound and the listeners' experience.

2. The characteristics of sound are enrolled to discipline the artists, recording studios and engineers (both live performance and during recording).

3. Producers maintain their position as an obligatory passage point through a translation of musical qualities into sound qualities.

4. Decisions over the sound qualities of songs are becoming reversible allowing the recording network to become more distributed in space and time.

5. The recording network stabilises music as a product with sound qualities. Music products are simulacra, copies of musical performances that never existed.

As these themes became apparent, interviews were sought to see at first how common such explanations were in the interview data, and then guided by seeking out different types of actor to gauge how sustainable the explanations were and whether there were variations in the way respondents accounted for their practice. This meant building up a corpus of data by interviewing different actors using knowable categories such as larger established studios, newer and smaller studios, and project studios. Interviewing established producers and engineers with access to well-resourced studios and recording projects, as well as newer producers and engineers operating within less well-resourced projects. Data collected with performers included unsigned, and recently signed artists, experienced signed performers and former stars from the 1980s and early 1990s.

As the themes of performativity, centres of calculation and the translation of music into sound began to emerge, I returned to interviews I had coded previously and found evidence I had not identified in my initial coding exercise. Building up support for these explanations was therefore reflexive, going forward and interviewing new subjects and going back and re-coding

previous interviews. Actor-networks involve the articulation of many actors in assemblies of discursive practice. These connections between actors enrol materials and people into coherently ordered heterogeneous network where the interests of some, are re-problematised as the interests of the network. In this perspective then, an actor-network can be said to exist when there are shared understandings, linked sets of practices that allow the organisation of music production to be performed, enacted, circulated. Therefore, when reflexively coding the interviews I found that more and more of the interviews I had conducted carried examples and data that supported the above explanations for how the network operated. What was noticeable and heartening, was that even when interviewing actors that bracket the recording network, the producer managers and label managers the themes identified among the 'studio' actors (studio managers, producers, engineers and artists) were present in their explanations and accounts. From the smallest project studio to the largest commercial studio, from the newest artist to the 1980s Pop star, from the amateur producer to the Grammy award winning one, the interpretations, decisions and practices appeared to follow a common thread. A logic of ordering that was shared by the actors in the recording studio emerged.

Saturation in this research project was reached not only when further interviews began to become confirmatory and not revelatory, but when the emerging explanations for how the network was ordered and made durable reached a stage of development such that most of the actors previously interviewed appeared, on additional review, to provide supportive data.

Conclusion

Actor-network theory sensitises research into the relationally performed character of markets and production networks. Critical to the construction of markets is the framing of practices, people, objects and spaces into networks of aligned interests organised around the creation and use of product and process qualities. The role of the recording project in the performance and maintenance of such 'qualculative' practices and inter-connective relations has been overlooked

in studies of cultural production networks that either explicitly, or implicitly, view production networks as enabling the transmission of culture from artists to markets. Building on the work of Frith, Negus and Hennion, but uniquely drawing on the perspectives of ANT, this research proposes that the creation of the musical product in a recording studio involving the producer, engineers and artists is not a process of dissemination, but of translation that involves interpenetrative links with the whole production and consumption network.

Interviews with actors in the recording project and observations of recording, performance and mixing sessions were conducted in order to reveal this important role of the recording project in the construction of popular music production and consumption. Obtaining access to the participants and spaces of the recording project is extremely difficult and this research marks a significant contribution to an under-explored site of activity. Using concepts drawn from actor-network theorising, the analysis of the data has generated a number of insights into the creation of a cultural commodity, the examination of which will form the basis of the following chapters. Insights denied to studies conducted within social network analysis and organisational studies, with their approach to networks as connected nodes of pre-ordained entities and objects structured by grand narratives. Approaching organised activity from an actor-network informed perspective offers us the ability to problematise the status of music product, to ask how it became rather than seek to explain how it is merely exchanged. It allows the identity of previously taken for granted roles such as the recording studio or the producer to be opened up and explored, and the practices that take place can be traced and revealed, not assumed as being structured by immanent forces or abstracted depictions of rational choice decision making.

Actor-networks are convergent associations of people, practices, objects and interests. To appreciate how this network is woven together, and identify possible points of overflowing it is necessary to trace the formation of hybrid (material/human) relations, the actors they create and the interests they are enrolled in delivering. This involves being alert to the construction of qualities, how they are produced, how they are used and what interests they enable. We are going to do this by following the construction of the musical commodity, the recorded song. This is not intended to suggest that there is a beginning and end; the actor-network is a

circulation, a circuit of relations that produce actors, systems of calculation and interests. Each moment in the construction of a song is relationally performed, produced by the operation of the actor-network. So although we are going to open the analysis with the artists discussing songwriting and playing their music in rehearsal rooms, the music production actor-network doesn't begin there. The artists, and their musical ideas are relationally produced, the result of associations between themselves and their record collection, the publication of chart listings, the broadcast of music, the space they are playing in and the technical objects they are working with. However, we need to start somewhere to explore the web of relations that connect and construct production, distribution, broadcast and consumption. Chapter 3 will tackle the initiation of the recording project, Chapter 4 considers the recording of the artists, Chapter 5 looks at the mixing and production changes and Chapter 6 examines mastering and live performance. Again, this is not to imply that these are discrete stages arranged in a linear and irreversible order, but is simply a narrative convenience. It also follows what will become a key part of the argument presented in this research, that music production involves the stabilisation of the music as a product.

Following the construction of the song in this way will allow us to travel through the actor-network identifying hybrid actors and performative relations as they come into view. We will end the analysis with the artists on stage performing the constructed song. Once we have reached this point in the circuit the full picture of the music production actor-network will have emerged and we will be able to identify the relationally constructed power relationships that shape how things are done and what is produced.

Chapter 3

Initiating the Recording Project: Assembling actors, establishing rules and roles

Introduction

The progress of artists and their music toward the recording studio takes a number of different paths. Bands write and record examples of their music, called demos, which are sent to record producers and record companies, and posted on their website and MySpace page, an internet social networking site currently popular for music postings. Concurrently they rehearse and perform at live gigs in pubs and clubs in part publicised on their MySpace page. A&R agents from record labels scout round these performances and internet pages looking for prospective bands. Artists or bands deemed to be the next big thing, "a buzz band" as one producer manager termed it, attract interest from a number of record labels often producing a competitive bidding process to secure their agreement to sign a contract. One artist, Ned Gold[2], was interviewed while being the subject of such bidding. Record companies will either create a contract for a number of albums and advance a sum of money to spend on recording an album, or initiate a development contract where the artists are put together with a songwriter/producer to progress their music and create more songs. Increasingly producers and their management companies engage in talent spotting previously reserved for A&R agents and scout for new artists by visiting live performances and going through chart and genre listings of unsigned artists on the MySpace Internet site. Once contact has been successfully made, the artists pay the producer to work with them on their music and produce a few songs or demos. In effect, a self-financed

[2] To preserve the confidentiality of the respondents involved in the research, their names and the studios and companies they work in and with, have been changed. For ease of reading their roles when not explicitly referred to, will be included in brackets. A brief description of their experience is included in a separate section at the end of the thesis.

development project with the objective of demonstrating the promise of their band to a record company.

The selection of producer either by the artist or record label is strongly influenced by their association with particular sounds evidenced by their credits on songs they had previously produced. Though funded by the artist or record company, the producer selects the recording studio to use in the project using a combination of budget available, and his (music producers are overwhelmingly male) preference for a particular studio. Producer management companies representing the producer supported by the record label concerned, then negotiate with recording studios on the terms of use. Studios compete for the business using daily rates for the hire of their facilities, which are made up of equipment lists, location and in-studio amenities such as relaxation areas, kitchens and bedrooms.

This chapter analyses this project creation process, considering in detail the key elements of the initial moments of the journey: songwriting and the creation of the demo, the selection of producer, and the negotiations with recording studios. This will be the start of a reconceptualisation of music production that because it rejects the transmission model of cultural production as involving largely unproblematised entities (products, artists, producers, organisations) being subjected to macro forces (markets, capital power, social trends, artistic institutions, etc.), is calibrated to investigate how music product is constructed. The analysis will begin to illustrate how, by focussing on relational associations involved in the practices of songwriting, demo creation and producer and studio selection, music production can be explained as a network of aligned interests, qualities and roles.

3.1 Songwriting

> *"From the first chord you are in the recording process."* (Anton Sprake: producer, engineer, and studio owner)

Songwriters described the process of constructing their music as a cumulative and collaborative one. Initial musical ideas for melodies, or musical narratives are drawn from being *"influenced by stuff, seeing stuff"* (Ned Gold) and then playing them on a piano or guitar. From this musical idea, which could be as small as a couple of chords (Martin Kato) or just a rhythm (Tony Poll) the idea is *"fleshed out"* (Roger Scope). Two notable features of the accounts of this move from musical idea to song were the use of song structure conventions, and the interaction between artists and recording and production equipment.

One convention apparent in the songwriting practices of artists was the duration of the song. Artists were well aware of the importance of time in the construction of the song:

> *"I suppose if you grew up in a Pop sensibility, which I did, it is difficult to avoid that. You have that notion of a song being...3 minutes, 4 minutes tops."* (Ira Baker)
>
> *"We will time it. Around 3:20, 3:30 that is your kind of basic length."* (Ned Gold)

Breaking this convention brings pressure from record companies who wish to get the song on the playlists of radio stations (Ira Baker: producer, artist). One artist, (Roger Scope) was criticised by his label for not always producing songs of the prescribed length. Along with duration, the structure of the song is also set within verse/chorus conventions that extend throughout the popular music product form. Though there are variations on their order and number, the common approach is to have a number of verses (usually two or three) that alternate with a chorus, which is distinguished by its repetitive refrain and usually contains the main message of the song and its title. The verses each maintain the same musical form but contain different lyrics. Choruses keep both the musical form and lyrics the same and are usually played at a higher tempo and volume. The verse chorus structure can, however, make listening predictable, so to maintain the interest of the listener it is broken by a middle eight or bridge. These sections are contrasted by a change of key and in the case of a bridge is a short section

that links the verse and chorus together, or for the middle eight is longer and replaces a verse or chorus and is designed to lead the song toward its conclusion. Artists interviewed, described the use of these musical conventions to help construct their songs:

> *"Well with Pop music you are essentially encouraged or hampered by the fact that they all have the same structure. So there is always going to be this verse bit then there is going to be the chorus bit that is supposed to be bigger than the verse bit. Then in certain cases there might be a bridge between the verse and chorus err that can be a little bit tortuous and then that thing called the middle eight which is a general break from the whole event."* (Martin Kato)

> *"Your brain is almost automatically trained to, after 20 seconds, you are either going to be on the way to a chorus or you are going to want to be in the chorus."* (Nigel Harris)

Song structure conventions were also used by producers when carrying out an initial evaluation of the artists' music and performance. Producers used them to structure their analysis and provide common terms with which to discuss their judgement of the song with artists and their management representatives. Here are two producers recounting such conversations:

> *"This bridge I don't like, but the chorus is very nice, but I think we should maybe try to write another bridge."* (Anton Sprake)

> *"Okay, 'how does the intro, verse…' Usually you will have Intro, Verse, Chorus, Verse, Chorus, then a little link between the end of the Chorus and the second verse and then second verse with chorus and then usually you have a Middle Eight and then usually you have chorus to fade or chorus and bridge sometimes and chorus. I mean that's the kind of classic Pop structure and if you do kind of radio songs."* (Jim Thomas)

Duration and structural conventions illustrate the way the creation of songs is linked to consumption. Artists are music fans and have deep knowledge of music that they like. The activity of songwriting is linked to the private (artist's music collection) and public (broadcast) music that the artist listens to.

The practice of songwriting was also linked to recording and production equipment more commonly viewed as being relevant once the song had been written. Recording equipment, either a microphone attached to a music software programme such as Logic or Pro Tools in the home of the artist (e.g. Simeon and Sonia, Ned Gold, Roger Scope) or within a small scale studio, a project or writing studio (e.g. the studios of Jim Thomas, Nigel Harris and William Wallby) play a hitherto unnoticed part in the evaluation of the decisions of the songwriter and

the development of the song. Artists' accounts of how they went about creating a song were not based on writing the song, using chords or notes, but on a cycle of play and record, then listen, such as in this exchange with Roger Scope:

> *"I'll start just by playing it live because then what that means is I can listen back and what I'm listening to is what I've written. I think the sooner you do that in the process, the better because like the second you write a song it's at its most fresh, it's at its most sort of raw form and there can be indications in that early stage that can lead you to 'Okay, well it maybe needs this,' or 'It needs bass,' or 'It doesn't need bass. It needs strings,' or 'It needs vocals,' or whatever it is."*

What is also evident in this perform, record and listen cycle of song construction, is how the operating practices of recording, where individual tracks are recorded and gradually built and arranged into a song have been carried over to songwriting. This excerpt is with producer Jeremy Hope, recounting a conversation with an artist:

> *"'Okay, we need to get a top line'. So, you know, you start singing along with it and you come up and get a top line - not necessarily words, just a top line. So you have a beat, a vibe, a sound, a rhythm, a feel and some motif up top, you know, some little phrase or something and the song is built with that vibe that goes on for 3 and a half minutes and the top line that comes in."*

The recorded performances of the artist used to perform song writing judgements also enable, as do the conventions of popular music form, the process to be geographically dispersed. Sections of the song are exchanged and combined by sending music files over the Internet between members of the band. The interactional nature of the songwriting practice, whether it be between music they listen to, other band members or their recording equipment, appears to separate the artist from the emerging song. This is an example of a theme that will run through this analysis of music production, a theme of stabilisation, of when and how the product becomes fixed as an object with particular qualities. Accordingly, the accounts below describe making the song into an entity and gifting it agency, or preferences and needs that are then fulfilled by the songwriter or producer. Songwriting in this sense becomes an assemblage, an association of relationships between the artist, music they listen to, the song and the recording and production equipment. As we can see in the following descriptions:

> *"It's also important I think to treat the song as an entity. You know, it is its own and it's sort of autonomous in many respects."* (Roger Scope)

> *"I was just sort of going 'Okay, maybe we'll just try that and why not have a nice little noise in there and a sound there and a part here and a dynamic here,' which is very important to me, and I kind of created this entity called [name of the song] and people thought it was okay."* (William Wallby)

> *"We work in the music industry, the currency is songs. I think they're the key, so you've really got to listen to them and see what they want."* (Roger Scope)

Judgements over what the song needs extend beyond musical elements and includes the evaluation of sound qualities to the songwriting activity. Alongside musical systems of evaluation based on notes, lyrics, key, melody and verse/chorus structure the sound of the music becomes a metric of calculation, a way of assessing the emerging song. And, in the process songwriting becomes entwined with recording. The following quote illustrates this:

> *"I write something just an acoustic guitar and vocal and I listen back to it and I think, 'Mmm, I could put an electric guitar over that.' Then I will record the guitar and listen to it and think that would sound really good with a delay on it. Give it a sort of 'echoey' sound to it. Now I think it needs bass. I have no bottom end [lower frequencies]. So then I will do that or I will get someone in to do that."* (Paul Macleod: artist)

Artists described how, during the creation of a song, they would put sound effects on their voice to hear what it could sound like once it had been recorded and produced in a studio (e.g. Ned Gold). In this way songwriting is not a disconnected stage organised according to artist derived systems of calculation and judgement but a practice formed by relationships involving the evaluations and activities of consumption and production. This brings the analysis towards an important distinction within the creation of musical commodities, that of music and sound.

3.1.1 Sound and music

We can analytically distinguish sound as a more physical, embodied phenomena than music. Sound refers to (the physics of) how the vibrations of air moving in sine waves created by the playing of an instrument or the vibration of an amplifier speaker, reach the listener. This can, as with the previous quote, refer to the range of different sound frequencies within the sound waves, or the characteristics of the wave's form, the timbre of the notes as in the switch from acoustic notes to electric guitar ones. Recognising this distinction will allow us to see, as we

follow the formation of musical product, how representations of sound play a central role in the relational ordering of music production practices. Sound is enrolled in systems of decision making, the disciplining of actors and the stabilisation of music in the form of a musical product.

The characteristics of sound waves vary according to the shape of the wave or its 'envelope'. The sound envelope refers to the structure of the wave, how quickly it rises (attack) to its pitch (frequency), or note, its volume or strength (gain), the range of different pitches around the fundamental pitch (overtones), how long the wave lasts (sustain) and how it drops in pitch (decay). The 'delay' effect mentioned by Paul Macleod is when the wave is repeated slightly after the start of the sound envelope to create an echo of each note. Sound effects distinguish popular music from classical, in that classical music has a notation system for transcribing the decisions of the composer and the actions of the performer. While the complexity of sound characteristics that characterise popular music cannot be captured by a notation system written on a musical score, as producer Jim Thomas points out:

> *"I guess the difference between like me and a composer who just writes straight on the page is that I decide on the kind of sound of the recording almost at the same time. When I write the bass, I kind of write for that particular bass sound and that part works with that bass sound and if you change that bass sound, well that's not going to work. If you change the synth sound, say, to a double bass or a softer synth sound or a Moog to a Korg[3], it's just not going to work. You know, it's going to have a different feel to it, it's going to have a different attack, the decay is going to be slightly different and it's just not going to feel as good. So all those production decisions are made as we write."*

Artists and producers respond to the indefinite character of sound by using scalar metaphors to communicate sound variables such as between clean and filthy: *"He (fellow band member in Peace Kills) will say I want that bit clean, or a bit filthy"* (Ned Gold). Other metaphors included the use of colours (Bill Sykes), weight (Tony Poll), temperatures (Dennis Hinton), levels of brightness (Calvin Miles) or consistency, *"muddy"* (Eric Efford), *"crunchy"* (Steve Toynbee).

Or alternatively make musical references to other artists (Nigel Harris), or specific genre sounds such as in this artist's account of creating a song:

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[3] Different makes of synthesiser

> *"It's got to sound like a 1968 soul record, so to do that, that was very sort of objective, you know. Even though I like the song and it sort of came from me, I was able to sort of really distance myself from it and listen to older records and think 'Okay, what sound are they using in the bass there?'"* (Roger Scope)

The use of these codes for describing sound play an important role in the performance of the producer's role and the consequent organisation of artists, and will be discussed in the chapters on recording and production. Important to notice here is that sound as a popular song quality cannot be captured through musical notation systems as is the case with classical music. The representation of this uncoded quality and the struggle to control it is thus a key feature in explaining the organisation of musical production and the formation of music as a product.

The use of sound qualities as a system of calculation extends to the A&R representatives and record labels in their decision over whether to sign a contract with an artist:

> *"I think that is very important to them (record companies) the sonic style is half the thing with writing songs now."* (Martin Kato: artist, producer, songwriter)

> *"And because a lot of the record companies are very - again less in this country - very… not narrow-minded, but they're…. For me the song is the fruit and the production is the basket. They don't hear the song on its own. They just see this hamper, if you like, and they go 'This is great.'"* (William Wallby: producer, engineer)

Producers respond to this decision metric by increasing the role of sound characteristics in the creation of demo recordings:

> *"...you really do have to begin delivering the sounds within a few seconds."* (Ira Baker)

> *"I think nowadays there are so many different kinds of music the dynamics, you almost have to cartoon things...make things more obvious than you would have done ten years ago just because of the amount of the stuff that is out there."* (Nigel Harris)

In Harris's case the need to exaggerate the music and sound qualities of the demo recording speaks, once again, of the interconnected nature of songwriting, production and consumption. Record labels compare prospective signings to already circulated songs and thus encourage the introduction of sound variables, present in finished recordings, within songwriting and development. As producer Ian Wood comments:

> *"If I was developing an act and I thought they were really good, I'd have to develop them*

> *to a much higher level before I'd present them to a label than I would have done previously. I think they're used to hearing finished product and it's less of a risk for them.*

In this respect sound appears to be a key variable in reducing the risk of uncertain cultural product, by enabling the sound characteristics associated with currently successful artists and musical trends to be formatted and their applied to the music of the artists in the recording studio:

> *" ...the style of the music the context of the music nowadays is so important. i.e. which bit of the past are we eating at the moment are we mining? The 60's? Ah! We've gone back to the 60's. So have we got the stylist elements required to get the context right?"* (Martin Kato: artist, songwriter, producer)
>
> *"'What works? Let's copy it' I mean it's always like that."* (Keith Nemo: producer, studio owner)

This can result in very explicit demands made of producers to reproduce successful sounds, as illustrated by Tony Poll, a producer and songwriter known for Rap and Hip-Hop songs:

> *"I remember back in I'd say like the mid nineties to early 2000 when Puff Daddy was huge and any time you went to a meeting the A&R man would just be playing loops and saying 'Could you make something with this?'*
>
> *"...or, 'Make it sound like this'."*

Basing the selection of artists to sign and promote on sound qualities, increases the importance of producers who are viewed as 'having' the sounds (Sally Johns: producer manager). A division opens up between artists who have the music, and producers who have the sound. As we examine the progress of a song towards the status of fixed product, the importance of this split in explaining the differential distribution of power within the recording and production network will become more and more apparent. One important difference between sound and music that will become evident in the following chapters is the way that sound is more transferable than music. This transference is evident in Tony Poll's description of meetings with A&R representatives:

> *"'We've just signed a band. Can you make it sound a bit like Coldplay and a bit like Fratellis?' and you're like 'Okay,' and you're doing it by the numbers. So there are very few A&R men that actually will sit down with you and say 'Oh, I've found this great talent. This girl plays piano. Can you bring out of her what she does?'"*

Though producers feel there are limits to this transportability, as in the comment by Jim Thomas following his successful work with a very successful female artist:

> *"Funniest thing I had is someone asking me to make Danni Minogue sound like [name of artist] and I said 'That's going to be very hard!'"*

The entwining of sound qualities with musical systems of judgement and decision making during the songwriting process and signing decision extends the role and reach of the producer, and signals the importance of conceptualising practices as human/material assemblies.

3.2. Selecting the producer

> *"I consider it a team sport. You know, I kind of have the final say, if you like. It's... I'm not going to make a record on my own. I need the band, I need the team. It's like being a Formula One driver. I might be a great driver, but I need my team around me."* (William Wallby: producer, engineer)

The theme of sound as a distinct set of qualities from those of musical notation or performance continues in accounts of how the producer and the artists come together for the recording project. With star artists who have a successful sales record behind them and significant promotional budgets to support their recorded songs, the selection of producer is a competitive affair with producers played off against each other. Invitations to pitch for the role of producer involve test mixes of the artist's material. This will entail manipulating the recorded tracks of different instruments, changing the sounds of the tracks and adjusting their relative volumes and frequencies or mix within the song. As was the case with producer Dan Shepherd:

> *"So yeah, you basically have to do a musical screen test for Madonna. I got approached by Maverick about 10 years ago and they said 'She's doing this record, this Ray of Light record. Would you care to do a mix of the title track?' 'Sure, I'll have a listen.' And they explained to me she's probably got 20 or 30 people doing this and she'll choose the one and the other 29 will get nothing."*

Though in this example the power to initiate the project clearly rests with the star artist, the ability of different producers to construct very different versions of the song and the importance

of making an informed decision on which producer to work with, is clearly evidenced by the number approached. This points to the power of the producer over the organisation and decisions taken within the recording project itself. In any case, the star system with its skewed sales distribution accelerated by the chart system works for producers too. We can see this when 'in demand' producers are approached by record companies to work on projects for their artists, or even just to give their judgement on a new signing (Alexis Troy: producer manager).

The connection between artist and producer is facilitated by producer management companies with the founder of one of the first producer management companies (in 1988), Adam Jones of Adam Jones Management, citing the difficulty of establishing contact between star producers and artists as one of the reasons for starting the company:

> *"Morrissey'd say 'Oh, you know, I'd love to work with Tony Visconti, but I wouldn't dare call him because he'd never take my call, you know.'"*

Their reputation as a producer was described as the key variable in their selection to work on a project and in winning the agreement of artists they may have approached (Keith Nemo; Anton Sprake; John Hinger; William Wallby). Reputations are built by association with successful selling records, as well as critically acclaimed ones. When the two combine, the reputational effect is enhanced (Keith Nemo). Reputation circulates by way of credits on the recorded songs (albums and singles). These are printed on CD covers, listed in charts published in music magazines, on publicity material and included in biographies of producers on their websites and those of producer management companies. Use of these credits is extensive. By artists, when approaching producers or deciding whether to accept their approach:

> *"We were lucky as Alan was a really good match 'cos his biggest production credit was to Simon Webb from the boy band Blue and you can't get much more Pop than that."* (Simeon and Sonia)

> *"We have approached a number of producers, Owen Morris, who had produced the first 3 Oasis albums we sent him an email saying look we love the stuff that you have done and he also did a band called Eastern Conference Champions from Pennsylvania who we had supported. So we said 'we really like the stuff you have done and we'd really like to work with you'."* (Paul Macleod)

By record companies when selecting a producer for their new signing:

> *"But very, very much through reputation. So you know that X or Y or Z are particularly good at whatever sound that you choose. So you'd choose that producer…"* (Ron Cheyne)

And by radio stations when deciding on their playlists for broadcast:

> *"Because it's one of them situations where even down to the plug that's going to radio stations and stuff like that, if they've got a track produced by someone in Sweden or Denmark who's worked on Neo's latest project and Britney's latest project etc. then he can go to the head of Radio 1 and go 'Okay, here's Claudia's new single and it's written by so and so who produced X, Y and Z.' Now they're not going to question and it'll get a listen straight away and it's more than likely going to go to A or B list for the rotation etc. and it'll probably get heavy play from before it comes out to build up the profile for it and it'll get a huge video budget etc. So they'll drive home the point that, you know, 'You will like this song!'"* (Tony Poll: producer)

The importance of reputation focuses attention on the means by which this reputation is built, the circulation of their name and role on recordings through textual credits.

3.2.1 Credits

> *"It's the only way you get more work really - names on records."* (Ian Wood: producer, engineer)

Credits function as a flexible specialisation tool allowing for the categorisation of producers according to the sound styles they are associated with, and the needs or desires of the record company or artist. In this way credits have both an empowering and constraining effect on the producer. The categorisation of producers with particular sounds, and the success of those sounds, enable record companies to specify particular sound treatments to be applied to a string of new artists identified as having suitable potential, such as occurred with producer Jim Abbas following the success of the Arctic Monkeys (Sally Johns: producer manager). This can encourage isomorphism within musical products that producers feel devalues the original sound and restricts the freedom of the producer, as in the following account of A&R representatives and their requests to producers to replicate previous sounds:

> *"They're trained to be marketing men now much more than music men. They're the kind of people who'll sign 15 Amy Winehouses because she's been a hit last week when in fact what they should be signing is something that isn't Amy Winehouse which will be the next Amy Winehouse and they never do that. You know, you see it coming. You see it coming. You see like something breaking like Amy Winehouse. Great album, really good second album. Brilliant. You know, it sounds great and you could see it, you know, breaking over everywhere and everyone was saying to everyone in the industry 'Oh, there'll be millions of them next year,' and then sure enough - Adele, Duffy, der-der-der - and still now I'm still being presented with even… I mean Adele and Duffy are okay. You know, they're B rate … but there's like D and E and F and X rates, you know, all being signed still now because they think 'Oh yeah! You know, retro, yeah!' It's like... Jeez."* (Jim Thomas: producer, songwriter)

Credit listings allow for the producers credited with the work, to also be listed and measured and in this way managed by record companies. Producer Tony Poll described this sense of measurement and was aware when he moved from between, what he termed, A-list and B-list producer status among record companies. When A-list, he would be brought in early to a project and given work on the songs targeted for release as singles. When B-list he would get songs designated for the album only. Credits as a system of calculation are also present in the operation of producer management companies, who use credit listings to demonstrate the suitability of particular producers on their roster for a recording project about to be initiated by a record company (Alexis Troy). Producer managers also match credits with genre listings inside social networking sites such as MySpace to identify future projects and signal possible links between their producers and unsigned bands (Sally Johns). These systems of calculation allow producer managers to organise the producers they are tasked to represent, and decide which are appropriate for particular projects:

> *"We've got a roster of 35-ish producers and we'll talk to three or four who we think are contenders."* (Adam Jones)

The importance of reputation in obtaining work as a producer acts, as a barrier for new entrants, who cannot demonstrate their sound management abilities:

> *"It's the old Catch 22, which I'm sure you must have come across that one - you know, you can't get work until you get a hit and you can't get a hit unless you get some work."* (Larry Jenkins: producer, artist)

Reputation, reified in credits for work done on songs, thus acts as a disciplinary measure, aiding the management of producers by producer management companies and record labels and

providing stability for and boundaries around the producer's role. Credits are used to prevent people self-labelling themselves as producers due to their ownership and private use of recording and production software. Studio managers and producer managers repeated typical conversations with non-credited producers or engineers:

> *"Well what have you done?" and then it's like… You know, that's the important thing - 'What work have you actually done? What work have you got credited for?'"* (Sally Jones)

Maintaining the integrity of the role of producer is a necessary feature of networked relationships that require the performance of specific roles aligned to enable the realisation of particular objectives. Too much fluidity in the system could make the network unreliable and variable and thus less able to be organised. The stabilising faculty of credits is all the more important when, as has been shown, the role of producer is located in the production of sound. As the availability of sound recording and production software confers, at least partially, producer status on its users. As in this account of an exchange between a recording studio manager and someone seeking work:

> *"I'll get phone calls from guys who have just left college saying, 'I'm a producer. Have you got any jobs?' 'You're not actually, my darling, because there is so much to it.'"* (Polly Apson)

Credits are therefore an important framing mechanism setting out both the objective of the producer's role (the reproduction of valued sound variables) and their identity.

3.2.2 The engineer

The career route to producer often starts with working as a studio assistant, supporting the engineer, then moving to an engineering role, before taking up the responsibilities of production (e.g. Tony Poll, Bill Sykes and Eric Efford). Producers interviewed described their early years of setting up microphones and serving tea, then taking the opportunity to engineer for a less well known band, demonstrating ability and then moving to the producer's role with a less well known band (e.g. Keith Nemo and Jim Thomas). Though some producers (e.g. Patrick Lane and

Ian Wood) had received some degree of formal musical training (college and university courses) stress was placed on the importance of an apprenticeship style of learning that takes place in the recording studio (e.g. Calvin Miles, Harry Stammer and Charles Church). The importance placed on apprenticeships indicates a point that will be enlarged during the examination of the recording network; the way that identities, be they engineers or producers are produced within the practice of recording in a studio.

Engineers are defined by contrasting their area of activity against that of the producers. It is usually revealing when one particular role is defined by another role. In this case, they are described by producers as operating at a 'technical' level, ensuring the performances of the artists are recorded, *"to bring it all in"* (Nigel Harris) from the live room to the producer in the control room. A definition repeated by engineers, as is the case with this self-description by Andrew Bones:

> *"...you want to be able to take your source audio - say your instruments - and you want the microphone to be as linear as possible. So you want as true a representation from the microphone going down the cable through whichever equipment on the desk, onto tape and then off again and then through the reproduction."*

This transfer of the 'source audio' is achieved through the miking up of instruments in the live room where the artists perform. This is a complex task, as the position and type of microphones determines what sound they transfer and thus what decisions a producer can make (Steve Toynbee: engineer, producer). How a drum kit is recorded will, if comprehensively miked, enable the producer to adjust the relative volumes of each drum and moderate the sound of each, say by adding an echo effect. The proximity of the microphone also changes the sound, as far away from the sound source will increase the likelihood of a spillover or 'bleed' from other instruments, but will also enable the sound waves to travel around the room and, by bouncing around, produce a reverberation similar to sound heard in everyday life. The transfer of audio signals from the live room to the control room will feature in the following chapter, as it has important consequences for how the recording project is managed and a song produced, as well as for the performance of the producer's power. For the moment it is sufficient to note that the role is described as one of transfer and not about determining, unless instructed by the producer,

the sound qualities and the management of performances of the artists. The demarcation identified earlier, using sound, between artists and producers is thus repeated with the engineers. Engineers are defined by the task of capturing audio signals *"once you've got everything set up like that, the engineer's job is kind of done"* (Steve Toynbee: engineer, producer). They are not described as being involved in the moderation of those signals, the judgements involving sound qualities:

> *"Engineers are the guys who tend to stick the microphones up and hit record."* (Derick Lawson: artist)

The critical difference between recording audio signals and sound judgements is identified in the following description of engineers who are organised to capture sounds in a separated manner without bleed and within the parametres set by the control desk, which has LED monitors that have green lights to indicate when an audio signal is good:

> *"I have worked with engineers whose sole job is electronic, wires, wires, they can do anything. But if I said I want a sound that booms like this and it has got to do this they wouldn't know what you were on about. They are just like ' I can get it to green' 'I can get it all lined up perfectly'... and I am just like 'that is good, but that's for Celine Dion records, not for interesting records'."* (Nigel Harris: producer, artist)

'Interesting' records in this producer's terms refer to sound characteristics obtained by deliberately using bleed from other instruments or where audio signals include interference created by having the source too loud. Engineers either follow the instructions of the producer or the LED lights on the control desk. They are not described as having a creative input with the artists and the moderation of the sound. This is the justification for the engineer being paid a daily rate and no royalties on the sale or performance of the record (Ian Wood: engineer, producer). Their task and contribution is not viewed as creative. Creativity, in this way, is associated with the manipulation of sound and the ability to overrule the instructions of the equipment. Judgements on sound define the producer, while the engineer records the music:

> *"As an engineer you record that song. You don't sit there and say that's a fucking terrible song. You would put yourself out of business."* (Owen Faulks: engineer, studio owner)

This separation between the technical task of the engineer and the creative, sound based role of the producer is not always clean, as the producer may call upon the engineer to become involved in creative judgements on the performance of artists, the moderation of sound and the mix of the tracks. This does not however, always mean that the engineer's role is recognised in creative terms:

> *"If he wants me to contribute, sure, I'll open my mouth and contribute, but you have to respect the role of producer because ultimately… yeah, they get all the credit and that's the painful side maybe if you've been doing a lot of the work."* (Owen Faulks)

Although the blurring of the engineer and the producer roles is a way for engineers to build up experience of production, their contribution is not always reflected in the royalty system: *'It's just one of those things you accept,"* said engineer/producer Pat Stills. Nor is it reliably credited in a symbolic manner by having their contribution acknowledged (if not a royalty generating acknowledgement) through the printing of their name on the CD sleeve. Adam Jones, a producer and engineer manager describes the management of such credits as an important function of his company, for without credits he can't demonstrate the value and therefore command a desired price for the producers and engineers he represents:

> *"I know people who have made records and I know they've been primarily responsible, but they never got the credit."*

The practice of crediting contributions of engineers, as 'engineered by...' if they carried out that role, and when engaged in production as 'additional production by...' appears unsystematic, and in response agents representing engineers viewed their task as one of making sure a credit is printed (Polly Apson: studio manager) and engineers specified the credit protocol in the contracts they signed (Ian Wood). Wood's insistence on this followed such a failure to credit:

> *"I spent six weeks with them here and Metropolis had one of their engineers around and I was working in the other room with the other half of the Black Eyed Peas and it was two rooms going all the time, stuff flying backwards and forwards, but obviously when the time came for the label copy to be submitted, the studio took care of their engineers, but they didn't represent me. I didn't have a manager, so I didn't get credited on one of the biggest albums I worked on as an engineer."*

Credits for engineering, once secured, do not easily convert into production opportunities and this encourages engineers to look for new artists, who if successful, will enable the engineer to upgrade to producer. Eric Efford, a Grammy award-winning engineer, describes this conversion from the technical role of the engineer to the creative role of producer as a principal challenge during the setting up of the recording project:

> *"Persuading people that I know what I'm doing. That's the difficult thing. I mean it is, you know, particularly with new bands and stuff like that. As somebody who's moving into production you're only ever really going to work with new bands because the great big artists aren't going to go 'Oh yeah, I'll have somebody completely untried and untested and I'm going to work with him.' You may be a great engineer but you know, it's a different hat as we say. You know, there's all the creative decisions to be made and ultimate responsibility for things, which you have as a producer. So it's only ever going to be new bands that are doing that sort of thing and you've just got to sort of through pre-production meetings or your management saying 'This guy is a fucking genius.' Try and persuade them…"*

3.2.3 Pre-production meetings and spaces

The pre-production meetings that Efford referred to are an important moment in the formation of a recording project. The meeting usually accompanies or follows a visit to a live performance or run through of some the artists' songs in a rehearsal room. Rehearsal rooms, as described in interviews, are an opportunity for the producer to rearrange the structure of the song, and assess the performance skills of the artists. The test of the performance skills of the artists in the rehearsal room or in a live performance is necessary since demo recordings will, as described, include sound treatments and may not be a representation of live performance but individually recorded and edited performances. Lack of playing ability, hidden by the construction of a demo recording with sound effects, is given as a problem by producers, who, once they listen to the artists in the studio realise they will take a long time to deliver the required performances for the session (Nigel Harris; Cliff Target). As the producer is held responsible for the management of the recording project unanticipated use of studio time, this is not in their interest.

The involvement of rehearsal rooms during the formation of the recording project is the first appearance of a critical aspect in the creation of musical commodities, the relationship between sound and space. The specifics of their intimate relationship and the management of their

interaction will feature throughout this analysis in particular in the following chapters on recording (Chapter 4) and production (Chapter 5). The relationship between sound and space and the organisation of people and materials within this interaction plays an important part in the explanation of power differentials across the recording network and the achievement of a music product. The rehearsal room is one such example.

Rehearsal rooms are designed to keep sound in, so that a number of bands can use the complex of rooms at once. However, beyond sound proofing, the rooms are not given sound treatments such as baffles to trap sound, or angled walls to prevent sound waves hitting a wall and bouncing back to meet another wave and creating a standing wave, and thus changing the frequency of the sound. The shape, size and material of a room affects the way sound behaves and accordingly, is heard. The point to be noticed here is that rehearsal rooms do not support sound judgements. The artists can practice their songs but, due to the qualities of the room, cannot 'hear' the sound as they would want to, or how it could be. Rehearsal rooms, which are often quite small, create a room of bouncing sound waves described as so *"dense"* by one artist, as to require ear plugs (Derick Lawson). While rehearsal rooms do vary in terms of their sound treatments, they are principally designed to be affordable enough for artists to practice for a number of hours a week, rather than to control sound waves in order to make judgements of sound quality possible. Artists operating in the sound/space of rehearsal rooms therefore develop their musical skills, but are separated from sound based calculations and qualities. To these they look to the producer, who as we will see when analysing the practices of the recording studio, utilise the rooms of the studio to create sound and build sound skills and knowledge. The rehearsal room thus contributes to the distinction between music and sound, and helping to shape, through the locations of different participants in the recording project, the roles of artist and producer.

The relationship between sound and the power of the producer is beginning to emerge. Producers were frequently described, and described themselves in terms of sound and their control over it:

> *"People come to me because they want my sound."* (John Hinger)
>
> *"Every producer has got a bag of sounds, of what they think sounds cool and what the band thinks sounds cool."* (Nigel Harris)
>
> *"He is now the producer on Bloc Party's latest one and it is really good. All we need is this guy because he has got the knowledge of current sounds and techniques. You can quite easily say 'Yeah we are recording with a guy who recorded the Charlatans' [early 1990s band] or whatever. That would be good, but it wouldn't be current."* (Ned Gold: artist)

Accounts of what happens during the pre-production meeting are described as discussions of sound, the work that the producer has done and the type of sonic treatment, the sounds that the artists are aiming for. This is done by swapping references to other artists and songs that they like the sound of. The sounds of choruses, guitars, drums, are tagged and exchanged by reference to the favourite recordings of the artists. The producer can then judge whether these sound characteristics are realistic for the style of music the artists play and whether they think they will be able to deliver them. The ability of the producer to change the music of the artists by modifying its sound attributes is illustrated in the experience of producer Keith Nemo who described the concerns of the artists during pre-production meetings:

> *"You're talking about questions of musical identity, style, development, arrangement, 'What's going to happen to my music? Am I going to work with this person?' I mean they've probably never met me before. So they've seen my track record, but they don't know what I'm going to do with their music and how I'm going to treat them."*

Producer Nigel Harris described demonstrating the sounds he could create by playing them to the artists during the pre-production meeting:

> *"I have got a catalogue of sounds that are always with me and I can bring it up and say 'Do you mean like that?' and they go yeah exactly. And I say 'I know how to get' that so we are sorted and we move on."*

If the artists and producer agree to work together, the producer will be offered a fee per track in addition to a royalty rate of around 4% of retail sales. Using the budget allocated by the record company, the producer selects the studio or studio usage for the recording project. The number of days required will be agreed and record companies or producer managers will approach selected studios to obtain quotes for the hire of their studio rooms and support from engineers and studio assistants.

3.3 Selecting a studio

> *" I mean we're at the rough end of the process I think at the moment, studios. I think they're under-valued. I really don't know how the labels can continue beating us down on prices. I mean honestly, 10 years ago we would be getting double per day what we get now."* (Polly Apson: studio manager)

Recording studios come in a number of varieties according to size and range of equipment available. Studio managers, producer managers and producers classified studios in 3 categories. Large commercial studios with established reputations, multiple live rooms and extensive equipment lists such as Abbey Road, Metropolis and SARM. Mid-range studios with perhaps one live room and one of two dominant makes of mixing desk (Neve or SSL) such as Miloco, Dairy, Soho Recording Studios, and Livingston, and project studios with a small booth for recording individual instruments and a smaller mixing desk with Pro Tools production and editing software. A common theme expressed by studio managers was the declining fee (over the previous 15 years) they were able to charge for hiring their facilities and the shorter terms of use. In what was generally described as a difficult time for studios, the fact that a number of previously successful, large and established recording studios such as Olympic, Mayfair, Townhouse, Eden and Mark Angelo's, had recently closed down was the subject of much regret amongst studio managers interviewed (e.g. Henry Dane; Polly Apson and Nathan Williams).

The reasons offered by interviewees for this situation were various. For some (Patrick Lane and Nathan Williams) the price of the land was important, as centrally located buildings in urban areas with rising asset prices, the owners of the lease were tempted to sell the use of the land for more profitable development or retail use. Against a back drop of declining industry revenues blamed on the use of illegal downloading of music (Robyn Fitz: record label manager), practitioners also pointed to the increasing use of smaller and cheaper digital mixing desks (e.g. Adam Jones and Jim Thomas), and the consequent increase in the number of studios, thus producing more competition (Henry Dane). The loss of chargeable items such as (analogue) tape (with studio mark-up), the organisation of taxis and a reduction in the number of 'lock-outs', were also cited in the declining fortunes of studios (Polly Apson: studio manager). Lock-outs were charges for the securing the room and preventing it being used by others while the

recording project had to be interrupted, perhaps because of a promotional commitment of the artists, the schedule of the producer or difficulties in obtaining an agreed final version of the recording. With digital recording systems, the settings and connections between production and sound effect equipment and the control desk can be more easily recalled than the physically wired, and manually adjusted dials of an electronic, or analogue studio. There is no need to prevent the room and its equipment being used, as settings and link ups can be quickly reset. As we shall see when we look at the practices of recording and mixing in Chapters 4 and 5, the significance of the recall facility goes beyond that of studios losing revenue from lock outs associated with analogue recording practices. For it highlights an argument that will emerge during this analysis, that a defining characteristic of the production process is the struggle to fix product qualities, which in turn is linked to the stabilisation of the systems of calculation involved in creating them.

By tracing the relationships formed and performed in the construction of songs, this study offers an account for the loss of power currently articulated by recording studio managers. The practice-based perspective of the research requires that we trace the whole series of framed relationships and identify the range and character of actors before we reach a conclusion. This means we need to continue looking at the organisation of the creation of music product before returning to the explanation of the current situation of recording studios. Within this examination emphasis will continue to be placed not on the organising power of technology, asset prices, market competition or consumption practices, but on how such relations are enabled through the performance of particular roles and practices. At its worst this approach will provide an empirical account for how such powers are realised in practice rather than through some abstract agency, however the contribution will go beyond this, and new hybrid actors and relational ties will be identified and an alternative account for the current distribution of power within the music production network will be presented.

With this proviso, a step towards this reconceptualisation can be taken at this point by observing how the studios' contribution is calculated, what qualities are part of the relationship between producers, recording projects and studios. Accounts of the process involved in the selection of a

recording studio are distinguished by the dominance of time and money, rather than the qualities of the studios, namely their live and mix rooms and the sound recording equipment they hold. Though studio managers described the importance of having up to date equipment (e.g. Gerry Harley) and often highlighted their ownership of particular microphones, processors, or desks (Neve or SSL), examples of equipment or room quality being an important feature of the selection of the studio were absent, or not supported. As the following exchange with Tim Simons, the manager of a medium sized commercial recording studio:

> *Tim Simons: "The most important thing is we have the SSL desk which is quite an important selling point.*
> *Interviewer: How many are out there?*
> *Tim Simons: Quite a few."*

The surprise of studio managers, that low offers were made 'even' on rooms with expensive mixing desks, reveals the difference between producers and studio owners/managers on the system of calculation and qualities used to evaluate the studio. The well-known management company were expected by studio manager Polly Apson to 'know' the value of the studio:

> *"I had a call two weeks ago from a very well known management company wanting to book the SSL room, which is £750 a day, and wanting an engineer. Average engineer £200-£250 a day. I said 'What's your budget?' Shortly after she'd asked me about an engineer I said 'What's your budget?' and she said '£250 a day,' and I said 'That's absolutely fine. That covers the engineer. What about the studio?' and she said 'No, £250 per day studio and Engineer'."*

Joan Smith, manager of Studio K, which is owned by perhaps the UK's most successful producer and contains high specification equipment and rooms, described how even this studio does not escape this divergence of perceptions of value:

> *"20-odd years ago for a studio like this you'd be paying £1500 for a day and if we can get £800 to £1,000 today we're lucky and that's with a bit of a fight."*

As well as being largely unable to associate the studio equipment in the negotiation with potential users, studios do not appear able to circulate, or associate their rate cards in their relationships with recording project managers (Edward Price: studio manager). Rate cards are published by studios setting out the price per day for the hire of different sized and equipped

studios. However while published on their websites and promotional material, they did not appear to inform the use of the studio. As studio owner, Patrick Lane, commented:

> *"I had a rate card as such, but it's pretty irrelevant these days."*

Ignoring the rate cards, studios are instead organised into bidding competitions with other studios to offer the lowest price and secure the use of the studio. The following quotes illustrate the inability of studios to include their rates in the setting up of the recording project:

> *"They won't even tell us we're bidding against anyone. They won't mention that they're talking to anyone else. They'll just put you on hold and you assume you're on hold and you just have to wonder whether anyone else is on hold or not. They won't tell you."* (Gerry Harley)
>
> *"Well, at first we simply quote them the usual rate and then they say 'We have spoken to xx studios and they can do it for £475, but you know the band really want to come to you so if you can get it a little bit lower [than their usual rate], down to £500 that would be great'."* (Tim Simons)
>
> *"So our rates are Studio 1 £750 and Studio 2 £550. It is my discretion whether to give discounts on that. Nine times out of ten we have to, to get the project."* (Polly Apson)
>
> *"People who book the studio, they beat you down to sell it to them for nothing. They won't even send you a signed booking agreement. All they'll do is agree to pay you the invoice when you send it off."* (Henry Dane)

There was concern amongst studio managers that dropping their rates enabled producer managers or recording companies to set the rates of the studio themselves:

> *"Yeah they say 'We have got another studio that can do it for this rate'. Whether they have whether they have not...you say 'Well OK', but once you have dropped that price that is then on their database and next time they come with a project it is well you did it for x amount last time and we only really need it for 10 hours now not 12...and you can't go up from that price."* (Tim Simons)

In this 'difficult' environment, studio-studio relations were not described as collaborative, rather they were engaged in lowest cost bidding wars with studios attempting to undercut each other's price (Nigel Harris). Institutional representation, in the form of the Association of Professional Recording Services (APRS), was not described as being able to exert any influence on this aggressive price based competition. Indeed the APRS had changed its name from the Association of Professional Recording *Studios*, reflecting, according to studio owner Henry Dane, the increased presence of sound equipment manufacturers on its board. In the late 1980s

early 1990s a breakaway group organised to form the Studio Accord which was later folded back into the APRS after the body agreed, according to Dane, to a reformulation of its studio representation. However the absorption of the Studio Accord has left some studio managers (e.g. Polly Apson and Gerry Harley) that there is no dedicated studio representation.

Accompanying the negotiations over the price is the theme, used as a bargaining tactic, of non-studio based recording and production:

> *"They say when discussing the recording budget that 'Well everyone has got a laptop'."* (Nathan Williams: studio manager)

The inclusion of the home production narrative that accompanies negotiations with the studio is challenged by studio managers. This exchange between a journalist interviewing Henry Dane, the owner of Studio C group, a well established group of large, commercial studios, and smaller production rooms, recounts a case where the assertion of the dominance of home produced songs was made over a project that Henry had himself managed. It is long, but is worth reproducing in full to illustrate the competing narratives involved:

> *"I was trying to go 'No, no, look, this is what you do.' And he said 'Well, The Prodigy album, that was all done in a home studio on a computer, so what's wrong with that?' and I went 'Well I don't think it was.' He said 'Yes it was,' and he showed me some advert in his magazine whereby Liam from Prodigy was saying he did the whole thing in his studio. But the reason that advert was there was because… he did the whole thing in his studio because the person that manufactured whatever it was that was being advertised had given it to him for saying that. So I said 'Look, I know Liam (Howlett) from Prodigy really well. He's a very close friend of mine and I manage his producer.' Yeah, a guy called Liam McClellan. I don't actually manage him any more because he runs a music company in America, but at the time I was managing Prodigy's producer and I know Liam really well and I said 'I can tell you that they spent six weeks at [name] Street mixing their album.' 'No they didn't. They mixed it in Liam's home studio. It says here.' I went 'It's bollocks. Did you not listen to me? I can show you the contract for the producer!' 'Oh, they had a producer?' 'Yes, a very expensive producer who I manage called Liam McClellan. He mixed the album and he spent six weeks doing it at Whitfield Street'."*

The music journalist was caught in the self-production narrative and was not able, despite the passionate denial by Henry (someone very well known in the sector), to adjust his understanding:

> *"'Liam did it all by himself in his home studio.' 'No, no, his producer got a great big, fat fee. I negotiated the deal and I also know how much they paid for [a large commercial*

> *studio].' The guy still doesn't believe me and it doesn't even say that in the article. It was just about 'Who needs a studio? I've spoken to Henry Dane from Studio C and there's no need for a studio any more because Liam…' You know, it was like, you know…[shaking his head]..."*

As Henry was to comment later: *"what's proliferated, if that's the right word, that's what's believed."*. The important point here is not whether home production does indeed rival studio based recording and production, but to note how the home production story is used to determine the nature and terms of studio involvement in the recording project.

3.3.1 Quantity not quality: the contribution of the recording studio

The framing of studios within a system of calculation based on daily rates, organised in competitive bidding wars and accompanied by stories of home production has produced a 'may the fittest survive' mentality among studios. Conversations with studio managers included the expectation that with some studios closing down, the remaining studios would be able to reassert themselves and command a better price for their involvement in the recording project. They hoped they would be among those left standing.

One studio manager interviewed has responded to the time and cost defined system of judgement of studios in a more active way, by adjusting the way he organises and manages the studios. Studio A is a group of studios that 'dry' hires its rooms, which means they only open and staff the studio once it has been booked. Their staff circulate around the various studios according to need thus reducing overall operating costs. Based around a principle of flexible specialisation they run over 12 different studios of varying specification, size and cost enabling them to offer a wide range of rates *"...you know, every room has a market"* (Gerry Harley).

Producer managers, such as Sally Johns, liked Studio A's strategy:

> *"Studio A we use a lot because you can always get… What is great about them is they've always got something because they've got their fingers in so many pies, if you like. 'We've got £200 quid,' and like 'Right, we can get you that, that…'"*

Though studio managers did not share their enthusiasm: *"Well, I think it devalues and debases the professionalism of a music studio"* (e.g. Henry Dane).

The achievement of the metering of studios' contribution through a time and cost calculation renders their relationship in highly measurable terms. Contracts are specified for a certain number of days and enable the tight monitoring and control of their use. The use of this system of calculation to mobilise the studio in the interests of the producer management and record companies was apparent in comments on what happens when overruns or booking cancellations occur. Studio managers described their task as making things run smoothly and not going over schedule (e.g. Tim Simons, Polly Apson and Ruth Pickard). In this framing, their role is measured by the degree to which they match the expectations of the initiating agents, the producer management and record companies. For example, when the project did not complete the targeted tasks in the allotted number of days, studio managers sometimes offered extensions at no extra charge:

> *"We tried charging people overtime and it was really awkward and it created more problems than I think it solved."* (Dennis Hinton)

A similar story emerged with bookings that were cancelled by the producer. In such cases studios did not seek to recoup any loss in earnings created by the short notice free studio time. Below Ruth Pickard, the manager of the very well established and large Studio B, is describing what they do when a booking is cancelled:

> *"Unfortunately, it's a problem because these type of bookings tend to come from major record labels who I have a relationship with and you keep the booking open and then they move it and then you can't really fill the time, so you are left with, you know, dead studio time. Sometimes you can fill it and it's not a problem, but it's very rare I'll charge cancellation because normally it's going to get rebooked, or there's a very good reason why it hasn't and I know I'll get some work further down the line. So you have to take a pragmatic overview."*

Studio managers attempted to improve the conditions of their involvement by establishing relations with producers in the hope that they use their studio over others (Joan Smith). Gerry Harley of Studio A described the objective as attempting to introduce room quality as a

calculative metric within the selection of, and terms with, a studio engaged in the recording project:

> *"That's why it has been historically getting producers on side so they like your rooms and then it doesn't matter because they'll say 'I want to go there'."*

Studio managers thus try to enrol the producer in their interests, to get them on their side, through the introduction of an alternative to cost and time based calculative metrics, that of room, and as we shall see when we analyse the use of the studio in the next chapter, sound quality.

Establishing such ties with producers can go further than keeping in contact with producers through follow-up post session communication. Links were built by entering into joint ventures with producers to build and share the ownership of studios (e.g. studios in Studio A group), or by adopting a practice initiated at a number of studios of building production rooms available on long term hire (6 months to a year) by producers. Production rooms are sited within the studio complex and are sound treated rooms that support the listening, analysis and moderation of sound recordings. They do not have performing rooms and can be hired along with a mixing desk and sound production software or be let empty with the producer providing their own gear. The idea is based on benefitting from proximity. Producers based at the studio are, in the view of studio managers (e.g. Henry Dane, Tim Simons and Nathan Williams), more likely to use their live and mixing rooms during their projects as they are co-located and make it simpler for producers to move from their room to the studio. Additionally, studio managers can find out what projects the producers are working on through informal chats during the day and offer discounted rates on the use of the performing studios if the producers are prepared to use the studio at short notice, or at times more distantly located producers would find inconvenient. This is useful for producers who may wish to return to the studio to re-record a track that is not working within the mix, or to use a high specification mixing studio to check on the finished sound.

The building of links between the studios and the producers in order to influence the terms by which studios are evaluated and engaged does not go without complaint from the record companies. As producer Keith Nemo commented:

> *"Actually that's another thing that's a contentious issue sometimes - that you can't really be perceived as being attached to a studio because that's perceived as a sort of partial conflict of interest thing. I mean you're supposed to choose studios for the benefit of the project."*

The reference to conflict of interest highlights the power relations within the recording project. The constraint over the selection of studio that may follow the establishment of ties between the producer and a studio is deemed to be a conflict of interest for the record company whose interest is in securing the best facilities for the lowest cost. It demonstrates the presence of an organising logic where the interests of the studio are cast as divergent from those of the recording 'project'. That the studio, unchecked, could be hostile to the success of the project. This is a significant position to have reached and is an achievement of the view that recording is defined by the problematisation of music recording as the application and moderation of sound characteristics. This ability is viewed as residing in the producer and, if the studio is viewed as a potential conflict to the realisation of this objective, not the studio. Sound is emerging as a property within the control of the producer, and not the studio. The result being that the studios are cast as a cost rather than source of value. However, as will be seen when going on to consider the recording stage of the project, the recording studio actually plays an important role in the construction of the musical commodity, one that goes beyond the characterisation of facilities host and cost driver depicted in the interactions examined thus far in the recording project.

3.3.2 Studio credits

The recording studio's reliance on building relationships with producers to improve the frequency and terms of their involvement in the recording project is increased by their relative invisibility on the musical product that results. In contrast to producers and engineers, whose circulation of credits on songs they have contributed to is acknowledged as an important part in

winning new work, enabling the performance of their role and in determining the price of their contribution, the presence of the studio is concealed. Studios are not routinely credited on the songs they helped create. While producers and the record label are listed on published sales charts and promotional material, and engineers on CD covers, the decision to recognise the studio used in creating the songs is beyond the control of the studios. As the following quotes from studio managers illustrate:

> *"'Please, please will you give us a lovely credit?' 'Of course we will. Of course we will,' and then you get a copy after requesting one ten times or you just buy it because you've given up asking and there's no credit and that is ever so disappointing."* (Polly Apson)
>
> *"Just because people might forget to put it on the label; somebody might think there's not enough space. There's no hard and fast rule. It's just simply down to whoever's typing it up, they might decide there's not room for it."* (Joan Smith)
>
> *"There's no recognition… There's no agreement with the studio other than it's booked under the standard terms and conditions of the APRS. So there's no recognition really at all."* (Henry Dane)

The lack of recognition of the studio is an accomplishment of the view that recording studios do not contribute to the qualities of the finished song, only the costs of the production of it. Importantly, the absence of the recording studio on song information feeds into the self-production narrative and increases the passivity of the studio in the recording project. The effect is complete when studio managers accept the lack of credits and don't, in some cases blame the record companies for their lack of recognition. As the manager of Studio Z, a well established commercial studio, stated:

> *"I don't think anybody purposely doesn't care. They just don't see it as a hugely important part."* (Polly Apson)

In place of unreliable crediting, studio managers (e.g. Owen Faulks, Joan Smith and John Hinger) put a great deal of emphasis on word of mouth. Producers and artists who had found the studio experience positive were hoped to carry that message forward into further uses of the studio. While word of mouth may or may not be important, what is clear is that removing the traces of the studio from the recording project effectively removes their voice, surrendering it to producers. Instead of their contribution being circulated around the recording network, carried

on the finished object, they are a disconnected facility to be used according to the interests of the producers and other members of the recording project.

Conclusion

Analysis of the initial stages of creating a music product begins to reveal how music production involves a set of relationally constituted practices and outcomes. We saw how songwriting, demo recording and project formation are not separate stages regarding mediation between competing interests, but are aligned inter-connective practices. Songwriting is connected to consumption through song and genre conventions relayed in published songs and chart listings. The construction of songs take place in association with recording and production equipment and follow a multitrack organising narrative practiced in large commercial studios. During this practice, the music as a set of notes, melody and lyrics, is entwined with sound based variables of frequency, relative mix of volume, or the sonic qualities, as producer Tony Poll termed it.

The problematisation of music as a matter of sound management creates and confers organising power on the producer, who is viewed as being able to make sound based judgements and decisions. Also beginning to emerge are the sources of producer's power within the production network. The role and identity of the producer is achieved through demarcation of other participants within the selection of the project. Artists in association with the spaces, the rooms in which they perform, are coupled to musical systems of judgement and qualities, engineers are set within technical systems of calculation, while producers engage with sound qualities. Sound qualities are valued by their association with successful selling songs conveyed in chart listings. A system of credits transported on CD cover information and chart listings help fix these roles in place and are drawn on during selection decisions and negotiations during the formation of the project.

The selection of recording studio to use for the recording project is shaped by these associations and regimes of calculation. They are defined by cost and time based systems of measurement in which their contribution is measured by how cheaply they can provide their facilities. The lack of credits given to their participation, the absence of institutional representation and the circulation of a home production narrative create studios as hosts of, not necessarily active participants within, the recording project.

During this analysis of the formation of the recording project a number of important themes that explain the particular organisation of roles, practices and outcomes of the recording network have begun to emerge. Perhaps chief among them is the problematisation of the recording project as one of sound construction and the association of the producer with judgments and actions required to manage and produce this sound. This problematisation and role of the producer are not derived from a normative reading of the nature of music or its production, but are achievements, the outcome of practices performed by the recording network. In order to understand how these achievements are realised we need to move on in the journey of the song and analyse what happens in the recording studio, the site of such performative practices. In the following chapter we will examine the recording of the performances of the musicians, the transfer of the musical elements of the song from the live room to the control room where the producer sits. During the analysis we will be able to identify the practices that enable the disentanglement of the music from the artists and its relocation to a system of sound judgements managed by the producer. A key element in this operation lies in the use of the space of the studio to manage sound and people, and to both support and distinguish between different systems of calculation.

Chapter 4

Multitrack Recording: Isolation and separation

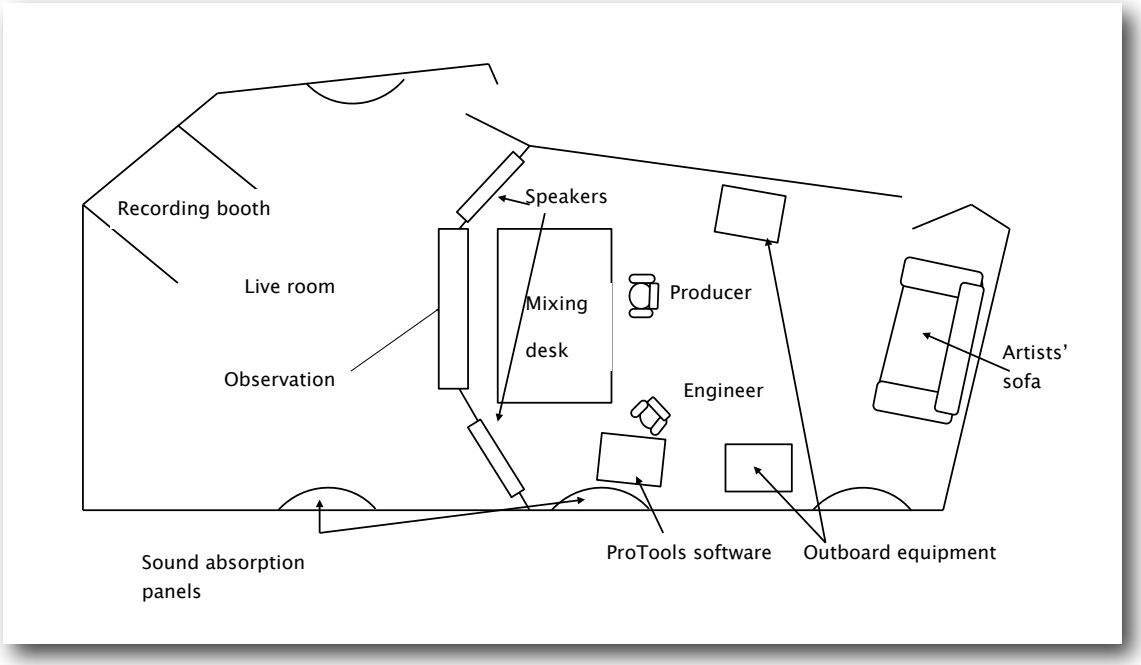
Introduction

This chapter continues to build an alternative conceptualisation of music production by moving on from the project creation process discussed in the previous chapter, to the practices of the recording studio and considering the first stages of creating music product, the multitrack recording of the song. I'll argue that the studio is much more than simply a space in which music is recorded. Music production is not, as is common in explanations of the music industry, a process that involves the capture of music in an object that can then be bought and sold, a stage in the transmission of music from artists to consumers. Rather, the studio is a performative space where product qualities are constructed and represented, identities and roles are created and power distributed. Critical to the analysis is the role of sound; how it is made, represented, moved, evaluated and fixed. The importance of sound, the construction of product qualities and the management of systems of calculation do not of course end at the multitrack recording stage. To complete the emerging reconceptualisation of production will need to analyse practices and relational orderings carried out during further stages of production: editing, sound manipulation, mixing and mastering. This will be the task of Chapters 5 and 6. To start our analysis of the recording studio, let's begin with a brief setting of the scene that greets the visitor on entering a studio, in this case, Studio I, a professional recording facility in London.

The door to the studio control room opens with a sucking sound. In the control room are two members of the band sitting on a sofa at the back of the room, the producer is in the centre seat in front of the desk, and the engineer is at another desk with a computer screen on it. Through

the observation window another member of the band is standing in front of a microphone. The rooms are lit by spotlights in the ceiling and the control room is full of banks of equipment spotted with red and green lights. The largest is the control desk stretched in front of the observation window. It is about 10 feet across and lined with sliding knobs some marked with tape indicating the instrument or track it corresponds to. The musician in the performance room has headphones on. His voice comes into the control room. He is asking how the last run through had gone. The producer presses a button leans into a microphone and tells him it went well but he would like him to do it again with more emphasis on a particular section. He does this by singing out the desired percussion rhythm. The producer asks the engineer if he is ready, plays a vocal track of the song, and cues the musician. The sound of his performance fills the room accompanied by the vocal track. *"We have done the guitars and keyboards already"* whispers one of the band, *"It is going really well. Alan [the producer] has got great ears"*.

Image 1.



Studio I Layout

Source: author

Producers are the project managers of the recording project, with styles of interaction that vary from those of a mother (Polly Apson) to that of a magic maker (William Wallby). All the

characterisations and self-descriptions of producers stress their power to intervene, arrange and decide:

> *"'No, that's crap.' That's actually the terminology he uses. He's a very interesting guy to work with. He's full of love, huge heart, but at the same time can say 'No man, that sounds shit. Change it. You know, play another chord' - and then you'll play something else, 'No, change it.' And then he'll maybe sing a note to you and you put that in and he goes 'That's it. Record that and then look for me'."* (Roger Scope: artist)

Though the exercise of the producer's agency is not uncontested, the picture that emerges from the following analysis of the recording stages of the creation of a musical commodity is one of organisational and evaluative power. This chapter will examine how producers, these temporary employees of the artists, achieve, without recourse to administrative fiat, the decision-making power over the artists and their music illustrated in the previous quote. The answer comes from looking at how this power is derived from, or performed by, other participants of the recording project. It involves the use of space and sound to privilege the position (spatially and organisationally) of the producer and afford them decision-making power. To do this we will first analyse the construction and layout of the recording studio, before exploring the practices and systems of calculation and judgement constructed by the multitrack recording process. We will then return to the studio spaces and illustrate how the different rooms and particular qualities of sound (natural, clean) are enrolled by producers to discipline behaviour, construct and divide tasks and responsibilities between the artists, record company agents, engineers, and studio personnel. This framing of roles and distribution of associated decision making powers, while evident in the analysis of multitrack recording covered by this chapter is however a network achievement and so we will continue to explore how these roles, identities and product qualities are defended and preserved as we analyse the creation of the music product through to distribution and reproduction in Chapters 5 and 6.

4.1. Disciplining sound: studio spaces

> *"You see, the definition of what you hear depends not on my voice but all the reflections of the room."* (Edward Price: studio owner, producer)

Studios are made up of two connected spaces; one, a live room where the musicians perform and the second, the control room, where the results of the performance are conveyed and evaluated. Each room is designed to manage sound. A sound is a wave of vibrating air, and is therefore intimately connected to the space in which it is produced and through reflection, reproduced. The performance room and the control room are variously 'treated' to make sound perform in different ways and enable two different modes of practice: performance and analysis. The way this distinction is constructed and the nature of agency it confers will form a key part of this chapter.

4.1.1 Treating walls: managing sound waves

The need to manage sound waves in the recording space is evident in the cellar like design and feel of studios (Cliff Target: studio owner). Producers, engineers and artists referred during interviews to the enclosed sense of the studio, a feeling increased by the frequent absence of external windows from recording studios. Windows can reflect sound waves, a property which interferes with the management of sound. As Ira Baker commented: *"Windows and views of the outside world are tricky, so it has got to be sort of dark small holes."* During visits to studios, those few with windows were highlighted by studio managers. For example, Ruth Pickard at Studio B:

> *"Yes, and the one thing that you probably haven't noticed about the whole complex is we've got daylight in every room."*

Studio managers' perception of the value of windows as a quality used to determine the use and selection of studios for recording projects was, however, reduced by the way they were used:

> *"Well, natural daylight's always good in a studio because… well, natural light's important to anyone's wellbeing but, you know, to be honest, [when] people start being*

> *creative it's normally at 3 in the morning anyway, so that sort of negates that."* (Joan Smith)

The recording studio's construction (the lack of windows[4], soundproofed doors and treated rooms), distinguishes the studio space, creating and separating the studio and the outside world. Engineer Charles Church's description of working in these spaces, illustrates this separation and the feeling of being confined in the studio:

> *"Because you sit in a small room for very long periods of time and you've got to be able to get along with each other. It must be like working in a submarine or on an oil rig or something, you are confined, although obviously you can go out the door and you're free, but in that small room it can be very intense..."*

What becomes apparent is that the needs of sound management are used to perform an act of separation, helping mark the boundaries between the studio space, defined by sound management conventions, and the outside world. A studio is thus partly an isolating mechanism, which, along with the practices of multitrack recording that we will evaluate in the next section, operates to support the producer's role and power. The interaction between sound and the space within which it moves, creates a number of variables that distinguish studio rooms: size, shape, and material construction. Discussing these features of studio construction is necessary if we are to begin to appreciate the enrolment of rooms by producers in the performance of their discretionary power over the construction of music product.

The larger the size of the recording room, the further away one can place microphones. The further away a microphone from the source the longer the time the sound wave has to 'develop' (Dennis Hinton: producer, studio owner). This is because each note is made up, not just of one frequency, but of a number, arranged across a harmonic spectrum. Each note contains a fundamental frequency, the pitch, and a series of other frequencies spaced at harmonic intervals, these are called overtones. The range of overtones around the fundamental pitch is what gives the note its tone or musical quality. The greater the distance from the sound source the more these *"overtones develop"* (Barry Katz: engineer, studio owner) and a *"better*

[4] Observation windows are different to normal windows, being made of heavy laminated glass double glazed with panes of different widths and mounted on specially constructed frames.

sound" can be recorded (Patrick Lane: engineer, studio manager). In addition to size, the materials that line the room, carpets, wood and stone have different effects on the movement of sound and thus on the sound that is picked up by the microphones. For example there are stone rooms whose dense walls absorb fewer sound waves, and consequently:

> *"...there's a lot more energy bouncing back from the initial sound source, which is particularly useful if you're trying to record high energy kind of Rock drums, for instance."* (Dennis Hinton: studio owner)

Rooms with little sound absorption treatment are described as *'naked'* (Edward Price: studio manager) and are viewed as being 'live', alive with bouncing sound waves. These rooms can be difficult to record in, as the sound is not being managed or corralled sufficiently to enable the engineer and producer to determine what kind and which sounds are captured. For example, Anton Sprake built a studio in an old film theatre, and though he attempted to treat the room by placing traps and baffles around the room, the large pillars and shape of the auditorium made it *"a little bit complicated to work in a room like this because it was so live"*. With unmanaged sound waves bouncing around a room, the ability of engineers and producers to select and discriminate the desired sound wave characteristic is diminished. In these ways the size and material of the room appear to be linked to the qualities of sound, however as we go onto to look at how rooms are used, this relationship and thus the ability of studios to distinguish themselves through their room characteristics is reduced. The strength of this tie between sound quality and room size and construction is dependent on the degree of sound treatment the room has received.

To 'treat' a room is to attempt to manage and plan the movement of sound waves. Studio rooms with a very limited reflection of sound waves, due to the sound absorption treatments such as sound absorption panels or rock wool lined ceilings and walls, are termed 'dry' rooms. Studio managers described their performance rooms in terms of a balance between the treated environment of highly absorptive rooms and the more lively reflective rooms that use space and materials to develop sound wave characteristics. The picture that emerges from descriptions of their rooms by studio managers such as John Hinger of Studio Y, a small professional studio, is of a space that acts:

> *"It's dry. It's fairly dry. There's a lot of rock wool in the ceiling and the walls. Obviously there's some bounce off the glass and I've got some wooden panels that I might move round. But it's fairly dry and that kind of works, you know."*
>
> *"I mean it's not too coloured, which is good, you know. It's not totally dead, but it's not too coloured."*

One of the fundamental requirements of a treated room is that the room be built in such a way as to ensure there are no parallel walls, which may create the standing waves that often figure in rehearsal rooms (Williams, 2009:73). Standing waves can mean that different parts of the studio room may conceal sound. For musicians placed in this area, the contribution of their instrument may be lost or changed in an unplanned way. This concern is illustrated in studio manager Dennis Hinton's reassurance about the qualities of his recording room in Studio P, a medium-sized commercial recording studio, with residential facilities:

> *"They [the musicians] don't appreciate quite how controlled the room is until they've worked in it a bit. You know, often people will go in the room and they'll go 'Okay, well where's the best place for the drums?' and, you know, 'Where should I avoid for vocals?' and it's actually, you know, the most even room I've ever been in. So you can pretty much put anything anywhere."*

Beyond avoiding parallel walls, the treatment of a room is a complex affair. Studio managers who had recently built recording spaces recounted how acousticians had advised on the building of the room, but that the complexity of sound control and the different characteristics of instruments and playing styles meant that their manageability was arrived at over a period of time, rather than from its initial design, according to studio managers Edward Price and Nathan Williams. As Gerry Harley, part owner of the Studio A group, commented:

> *"Sometimes you just build the room and see how it sounds and then sort of treat it to change certain dynamics of it once you get people in there saying 'Oh, that sounds a bit…' So you sort of listen to feedback before you fine-tune it as it were."*

This 'fine tuning' refers to the building, placing or removal of sound absorption devices such as baffles and screens that trap or diffuse sound according to need. In addition to the placing of sound absorption materials, live rooms also require careful siting of microphones. Depending on their position, microphones capture different sets of sound waves and can thus record different sounds (Steve Toynbee: engineer). Knowing where to place different microphones for a range of

different instruments requires an understanding of the way the room reflects sound waves. This can make moving between different studios with different reflective patterns a challenge for producers and engineers who will need to conduct lengthy, time-consuming experiments to identify the desired microphone positions. It is this requirement that Henry Dane uses to critique Studio A's dry hire strategy, and present it as self-defeating:

> *"If you're turning up into a studio you've not been into before, then if you've got somebody who knows that room really well - not some keys sent to you in a Jiffy bag in a cab - you're going to get a better session. You're going to get more done in less time. So maybe for £500 a day you're going to get twice as much done as you did for £250 a day, but the perception of the clients, the record labels, if you like, is that 'Oh well, no, I don't pay more than 400 quid' for whatever reason and its bollocks. It makes it really difficult."*

Depending on how 'live' the room is, the advantage of 'knowing the room' in terms of what frequencies behave differently in different parts of the room, links the engineer, whose task it is to set up the microphones, to particular studios. The producer, in terms of the recording process, is not however operating under such knowledge constraints and thus remains more mobile. This enables producers, using the room-based knowledge of the engineer, to work in a variety of recording rooms. This flexibility, an aid to their relative power over studios during the negotiation of project membership, is lessened when the task turns to one of mixing and sound manipulation. Following the recording of the musicians, the mixing stage of the recording project when the recordings of different tracks are combined and their sound qualities adjusted, the link between the producer and the room becomes more fixed. We will consider the consequences of the link between specific rooms and the production of music in the following chapter. Let's continue to analyse the role of studio rooms by considering what will emerge as a key quality in music products and the ordering of the production process, the 'naturalness' of sound and the disciplinary use of the studio rooms.

4.1.2 Being in the room: artists in the treated space

During interviews on the qualities of different rooms, the theme of naturalness was frequently raised as a distinguishing factor. However references to rooms being natural did not mean untreated they referred to an augmented real, a representation of real, where the behaviour of

sound was managed to produce a 'real' feel, a *"natural ambience"* (Eric Efford: engineer, mixer, producer).

Harry Stammer, a mixing engineer, describing a studio he had worked in recently, illustrates this reframed notion of real:

> *"It's not too bright, but it's live and it sounds natural, but it also has enough reverberation that it kind of enhances instruments that are played in there. I mean string players and brass players especially like to have a room that gives them something back. You know, if you're playing an acoustic instrument, it's uncomfortable if the sound doesn't come back at you, but gets sucked away and then it doesn't feel very natural because it isn't natural, you know."*

Two points are important to flag up here. Firstly, that 'natural' sound is a constructed quality, enabled by the design of the room: it does not exist, but is achieved. The construction of natural sounding music is an important organising feature of the music recording network, and is a theme that will grow in importance as we continue through the analysis. It has particular importance in the following chapter when we consider the practices of mixing and editing of the recorded sound. At this point it is important to note that one way of attaining 'natural' sound is through the sound qualities of the performance room. In the large performance rooms of established studios such as Studio G, Studio C group, or Studio B, the size of the space allows sound to travel and develop its overtones (and thus appear 'natural') without bouncing around the walls of the room and creating a dense unmanageable combination of frequencies (Jeremy Hope: composer, artist; Eric Efford, engineer). This is in contrast to smaller rooms whose size means that sound cannot be allowed to reflect around the room, and is thus treated, in Stammer's words, to 'suck' away the sound. However, as we shall see when we analyse the recording practices in Section 4.3 of this chapter, the practices of the multitrack approach appear to diminish the value of large rooms. An outcome that opens up the range of spaces that can be used for recording to include home or project studios built in sheds (such as owned by Larry Jenkins, and Ian Wood), rooms in the home of an engineer or producer (Keith Nemo and William Wallby's studios) or in studio complexes (where Bill Sykes and Jim Thomas work) or commercial facilities (where producers Jo Berg and Tony Poll have their studios).

Secondly, the response of artists to being in such treated rooms. This introduces another important theme. So far we have considered the relationship between sound and space. However, studio performing spaces, be they 'dry' or 'live', in a studio or a home, do not only act on sound but also help shape the behaviour of those who use them. The demands of the recording space, especially in smaller studios with more heavily treated rooms, are felt by musicians who work in them. This is Ira Baker, producer and songwriter who sometimes works as a session musician:

> *"There is something about the clinical nature of recording rooms. When you enter a room it is dead acoustically. Because it has to be. It is an imposing situation where your feet clip-clop across the floor, and you have got your headphones on and you are not allowed to make any noise. You have got to wait for your track to come on...it is very unnatural in a way."*

The disciplinary nature of performance rooms is suggested in this quote. The conventions of the room, the wearing of headphones (something we will look at a little later in this chapter) and the restriction on noise, organise the body of the performer, and contribute to the demarcation between the studio and the outside world. In this sense the studio is seen as a place of restriction, justified by the needs of sound, and stands in contrast to the sense of freedom, evoked by engineer Charles Church, that lies beyond the studio door. In response, some artists described seeking out recording spaces away from the rules of the studio. Dan Shepherd described recording next to his hero Jim Morrison's grave, Martin Kato once recorded the snare drum in a lift and the kick drum in the loo, and Roger Scope described the delights of recording in a cottage in the Mourne Mountains in Northern Ireland.

Roger Scope's description of an attempt to record in the street outside the studio he was using demonstrates this desire to break out from the conventions of the studio space:

> *"Another studio, the Wapping Press in East London, we brought the mike out into the street to get the street noise and I sang on the pavement, which was good. We ended up not using the recording, but it was an interesting process and, do you know, I think actually even by doing those things it just helps you sort of disengage with the studio mentality. It helps you to be outside of it. Whether it's of use or not, whether that recording ends up on the record or not it doesn't matter what it does. It sort of sets the precedent that puts… you know, it lays out the parameters of where this could go and I think that gets everyone in the right frame of mind - for me anyway. I think then everyone's kind of going "Oh right, listen!" It's not just put that down and then we'll*

layer a bass on top and then we'll put this on top of that and then we'll put this and then we're done."

Roger's appeal to the recording project team to listen, rather than follow the conventions of recording, reveals an opposition between the managed performance of recording practices and the desires of the artist wishing to retain control over the evaluation and actions involved in creating recorded music. Also of relevance in this account is the admission that the non-studio recording was not used. The escape failed. To examine the association of studio performance spaces with particular actions and roles we need to go further than this discussion of the construction of performance rooms and analyse in more detail the use of the space during the recording process referred to by Scope. This will involve examining the practice of the layering of individually recorded tracks. In this analysis we will see a continuation of the disciplinary features of the studio carried out in the name of sound, and be able to further examine the significance of the emergence of smaller recording spaces. Central to this is the way multitrack recording practices build on the logic of managing sound to create and organise the roles of artist/performer and producer by inscribing different values to the live and controlled recording spaces.

4.2 Disciplining the artist: multitrack recording

"So it's fun when you're performing, and fun when you're rehearsing, and then not so fun in the recording studio." (Dan Shepherd: artist, producer, engineer)

Multitracking involves the separation of the song into recordings of individual performances with different instruments or multiple versions of the same instrument. These are collected and labelled in the producer's mixing desk. The mixing desk is arranged in strips of controls for each track (fader for volume, routing choices enabling the sound to be sent to different speakers or headphones, and sound moderation controls). Each microphone can be recorded as an individual track or combined and captured on one track. These recordings are

then labelled on the desk according to which performance it holds. The desk over the page, for example, has 24 channels with the contents of each written on white labels below the faders.

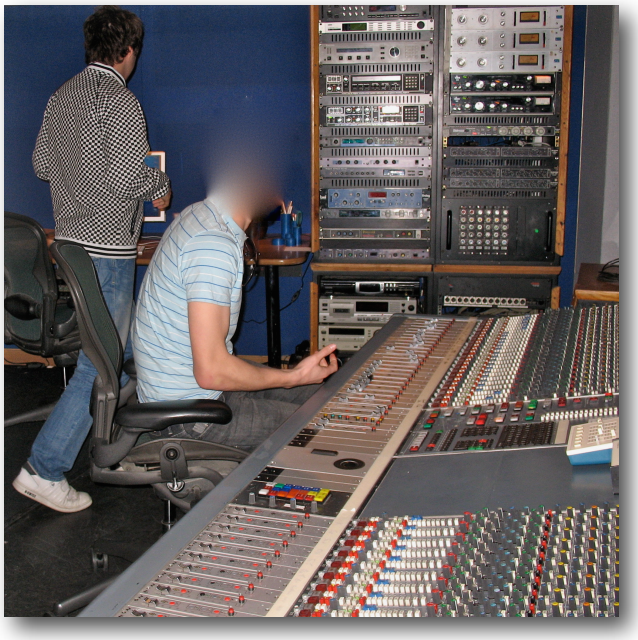
Image 2.

Mixing Desk (project studio)

Source: author

Larger desks used in commercial recording studios have 72 channels. The picture below is from the session I observed at Studio I.

Image 3.



Mixing Desk (commercial studio)

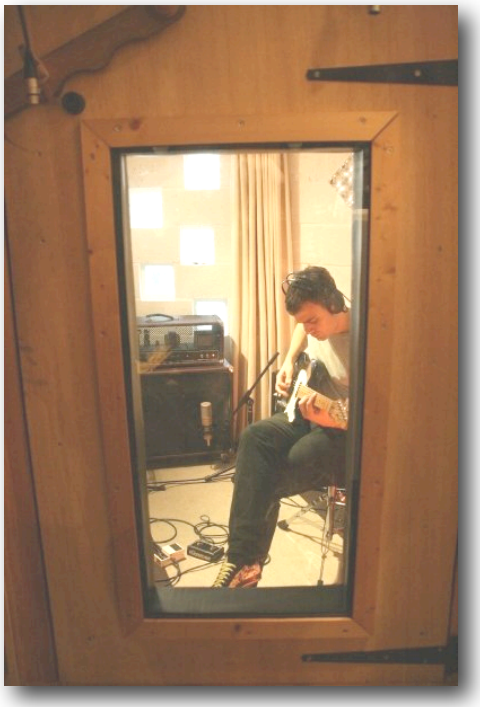
Studio I (engineer at the desk, producer back to the camera)
Source: artists

The degree to which songs are disassembled was revealed by the producer Tony Poll, who once used all 72 tracks available on the mixing desk, and added more by connecting to a software programme to enable an increased number of tracks to be stored. A practice supported by Jeremy Hope's account of using 64 tracks just for the vocal recordings on a record he had recently produced.

4.2.1 Isolation and scrutiny

Multitracking is a process of separation and naming, turning the song of the artists into what producer Larry Jenkins described as 'raw materials', and collecting them in the mixing desk controlled by the producer. Their recomposition into one song is the task of production and mixing which will be covered in the following chapter. The multitrack recording process usually begins with percussion, the drums, moves to the bass, then the guitars and finally the voice. An important consequence of this practice is that, as well as separating the music into individual performances, multitrack recording also breaks up the band of musicians.

Image 4.



The Isolated Performer

Paul Macleod recording a guitar track
Source: Sonia

Individual musicians are placed in the recording room or booth and in what can last for days, repeat their parts. The long hours of repeated takes of an instrument or performer requires stamina on the part of the performer and the other members of the band:

> *"...there is nothing worse than listening to drums on their own. It's the most soul destroying thing in the world. No matter how good the drummer is...it is boring."* (Nigel Harris: producer, artist, studio owner)

To occupy, and thus support the separation of the musicians, recording studios provide relaxation (distraction) spaces with pool tables (Studio M), table football (Studio P), ping-pong tables (Studio N), DVDs and computer games (Studio B). As Ned Gold, lead singer of 'Peace Kills' recounted:

> *Ned: Matt, the drummer, he did one and a half days of drums. That was it, he was completely knackered. That's him for the rest of the week.*
> *Author: Were you still there [in the control room] watching him?*
> *Ned: We were playing pool! We were there for like two hours but the sound of drums for two hours is just like...it is not what you need. We thought we would leave him to it."*

The recording of a track can thus be a period of intense scrutiny on the performance of the musician, a time when the producer engages in intimate social management of the artists. It is also a self-surveillance device, with studio practice being described by producer and studio owner Owen Faulks, as a mirror, reflecting in detail to the artist how (representations of) they are performing. The mode of performance in the recording studio thus contrasts sharply with that of the rehearsal space described by artist Derick Lawson, where the artists worked up the early versions of the song. In a recording studio, the effect of separating out all the instruments from the different performers, and reproducing the sound in treated rooms that enable a more detailed analysis of the sound, is to reveal the performance and musical qualities of the artists and song. Previously obscured by untreated rooms and the combination of all the performers playing at once, new aspects of the performance are introduced by the producer. This particularly the case with new entrants to the practice of recording:

> *"If you work with people who are 19 years old and have played for probably 2 years in their rehearsal room at full volume and they come to the studio and it's maybe the first time that they hear individually what they're doing, then of course it's a totally different situation and very often things fall apart and you think 'Well actually, the bass is not synced with the kick drum and the guitars are doing something that clashes with the bass line all the time and the drummer's not keeping the time.' - all the things that you*

> *normally wouldn't really analyse and realise if you are in your rehearsal studio. Even if you do little recordings there, the sound is very often so not transparent that you don't know where you stand. So you come to this place here and this is a kind of laboratory where you think 'Oh, that's what we're doing?'"* (Cliff Target: studio owner, producer)

This amounts to a reframing of the systems of judgement, one constructed by the change of performance site from the rehearsal room to the recording studio. Rather than the band making decisions on their music, the revelatory process of the recording studio and multitrack recording shifts the decision to the producer. This relocation of decision-making is reinforced by isolating the performers from the rest of the band, placing them in a room separated from the producer by an observation window and connecting them up to microphones:

> *"It's pretty weird as well when you've got the headphones on and there's silence, just standing there in a silent room with headphones on waiting for the track."* (Eric Efford)

The observation windows are a very noticeable manifestation of the separation and scrutiny of the artist. This line of sight, plus the soundproofed room, creates a quite dependent relationship between the artist and the producer and others in the control room. The artists can see the producers, but not until the producer presses the talk-back button, can they hear what they are saying about the recording. They wait to be reconnected. This disconnection of the performer and location of judgement in the control room is evident in the following examples from producers and artists:

> *"You know, there's some people don't like it when… you know the talk-back button, when that's off and you're talking. You know, there's elements of paranoia obviously."* (Eric Efford)

> *"You can begin to get paranoid about what they are saying. When you see people talking but you can't hear them."* (Ira Baker)

> *"There are times when you see them all talking and you're kind of trying to catch their eye. When they have finished recording when you are on the other side, bass player and drum there and he stops and he says what do you think and it's a conversation of people saying yeah and bouncing ideas off each other. Then they push the button to come to you and they say yeah that sounds good but we all think you can do XYZ."* (Paul Macleod)

Image 5.

Observation window

Simeon, lead singer, during the Studio I recording session. The observation window is in front of the mixing desk. Source: Sonia

A further very visible element in the construction of the role of performer is the use of a red light in the studio room where the artists perform, to signal the start of recording. The red light switches on, and, in the words of Roger Scope, the instruction that is either spoken, or felt is: *"1,2,3 Go! Be brilliant! You know, Do something remarkable! Go!"* To add to the producer's scrutiny, the headphones that the performer needs to wear so that they may maintain the same rhythm as the other musicians provide the means of close self-scrutiny by the artist. As artist Derick Lawson explains:

> *"...you go into a studio and because you have everything miked up and because all the amps and drums are so separated you can really hear everything you are doing really clearly. For a lot of people you find yourself getting a lot more self-conscious because you can hear so clearly. And you think well this is getting recorded so I can't screw anything up so in a way you don't really go for it live or in a rehearsal studio because you don't want to mess anything up and so the performance ends up sounding a lot more wooden."*

The challenge of performing in such a surveilled and self-surveilled manner can damage the performance of the artist. The power of the producer in this situation was recounted by Cliff Target in a story of a company using his studio for casting sessions. To select between different singers a producer, hired for the occasion by the recording company, auditioned them singing in the studio. For some singers, Cliff could see from the way the producer provided little comment

over the talk-back intercom between the control room and the performance room, that he didn't favour a particular performer and was consequently damaging his performance:

> *"To be honest it is very easy to conduct such a recording in a way that the artist on the other side looks like he is a total beginner. You can really psychologically dismantle him with his (even) under-performing."*

In standard recording projects however, the producer, once he has situated the artist in this position of isolated scrutiny, offer themselves as a friend or guide to help the artist through the session and deliver the required performance (Larry Jenkins). Producer accounts of this guidance were set within an attitude of extraction, of obtaining the performance from inside the artist:

> *"You know, sometimes you have to be the task master and, you know, be the hard person to get that and other times you have to be their best friend to do it, but it's just whatever it is to get it out."* (Pat Stills)

The approaches taken to achieve this varied, with some taking the red light out (Pat Stills and Cliff Target), decorating the studio or turning the lights right down to make the studio less visible (Jeremy Hope). Such steps were part of wider attempt, on the part of the producer, to conceal the act of recording from the artist (Jim Thomas: producer). The photo below is from Cliff Target's recording studio, a small sized professional recording studio. He put flowers in front of the observation window in an attempt, albeit a humorous one, to make it feel like a kitchen window.

Image 6.

Kitchen Window? Observation window at Studio B1

Source: author

In a similar vein, William Wallby described how he would attempt to obtain a performance by claiming that the performance was just a run through and not being recorded:

> *"Well, I'm just setting levels and things. 'Can you just sing it through from top to bottom just to kind of get the vibe?' and 9 times out of 10 I'll end up using it or most of it or some of it..."*

Multitrack recording is thus a practice of detachment. Involving the separation of the artists from each other, separation of their performances, and further a separation of the artists from their song and even their performance.

4.2.2 Enrolling the artist

In place of artists working with each other to provide timing and performance cues, the producer takes up this role using click tracks or selected recordings to discipline the artist. A click track is a defined rhythm of clicks sent by the producer into the headphones of the performer. These beat out the time of the song. Click tracks are precisely defined by the mixing desk and introduce a system of measurement by enabling the producer to map the playing of the artist to the click track to identify any variance between the two. Establishing an accurate rhythm is necessary explained Anton Sprake and John Hinger, as if the tracks of the individual performers were in different timings, then layering them or mixing them together (practices discussed in the following chapter), would be much more difficult. For performers that follow the drum track recordings, the producer has the option of using the previously recorded tracks to conduct the performer. Editing software can enable the producer to make adjustments to the timings of the tracks though if they are too far out of time any change becomes noticeable. This activity will be analysed in the following chapter when looking at production and mixing. It is relevant to bring it up here as producers can use editing software to create a guide track for the performers to play along to. This allows performance qualities (such as how the musician plays the instrument, or how loud to play/perform) as well as timing to be established by the producer and then replicated by the performer. In this usage, any artefacts created by severe editing or retuning (we will discuss this in the following chapter) are not important. Here's Owen Faulks describing the

process he observed while engineering for a producer who was having difficulty with obtaining the desired performance:

> *"He's taken their parts, cut them about, 'Don't like that bit. Like that for the guitar.' He'll out of his takes make the guitar solo. Right? When he's finished he's got this sort of plasticised version of the song. He'll call the player back in and go 'Right, play that live.' That's the best of both worlds really."*

Constructing a guide from a compilation of previous performances, illustrates the power of the producer in the multitrack recording process, in that he can discipline the artist with their own performances. The previous recordings of an artist, with producer adjustments, are thus enrolled in the direction of the artist. Rather than musicians using their own judgement, multitrack recording transfers the activity of evaluation and assessment to the producer.

This transfer of calculation from the artist to the producer is further enhanced by the producer's control over the routing of sound. Producers guided and evaluated an artist's recorded performance by altering and directing sound between the performance room and the control room: *"We can send whatever [sound] we want"* (Edward Price). The producer, through the mixing desk, can separate the audio signals and send a treated sound to the headphones of the performer, while keeping the unaltered sound coming into the speakers in the control room (Jo Berg). This division of sound creates different roles. The producer as analyst, and the artist as performer, provided with what is necessary to support their performance. Cliff Target, a producer who is also a performer describes the more comfortable, altered sound he prefers when performing:

> *"If I do vocal recordings, I don't want to hear it pure. I want some reverb on it and some compression on it and I'm so used to that that I feel a little bit uncomfortable if I don't have it."*

Producer William Wallby described how he changed the sound received by the performer using frequency adjustments (equalisation) and reverberation to give the performer a fuller, richer sound of their voice (in their headphones):

> *"Yeah, I give them what I want to hear. I make them comfortable. I give them reverb and a bit of EQ to make it sound nice for them."*

By moderating the sound coming into the headphones of the performer, particular qualities of the artist's performance can be encouraged by the producer. In singer Ned Gold's case, his producer gave him the reason, which he then adopts as his own requirement:

> *"I always want a massive amount of mix coming through my headphones but mainly on the left and then not much of my vocals on top of it. So I am almost like fighting over the top of it. I think that is what gets out the aggressive sound. Fighting it. I can see where he [the producer] is going with that."*

Producers do not however, always inform the performer of the changes made, as in this example from William Wallby:

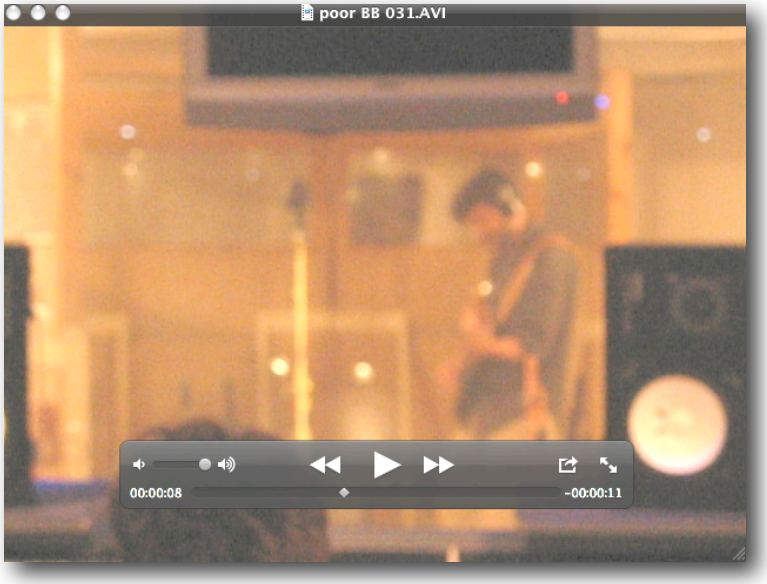
> *"...if I want someone to sing… Again I don't tell them this, but if I want someone to sing a little bit more intimately, depending on the nature of the song, I will make the vocal much louder in their headphones so that naturally they'll just sing a little softer or with a different colour in their voice. And if I want them to sort of go for it a bit more, I keep pulling it back down so they almost feel they have to sing a bit more and sing out more."*

This underlines the producer's use of sound to manage the artist and produce different outcomes. The producer can hear sound in a form that enables them to evaluate it for tunefulness and musical skill, while the performer hears sound designed to elicit a performance: different qualities and therefore different calculative opportunities organise the relationship. Producers listening to the unaltered recorded sound can make assessments on the quality of the performance, and, as in the cases below, enable the producer to control the judgement of the performance and thereby encourage and obtain more takes. The asymmetrical nature of the relationship between the producer and artist is described in benign terms, a necessary deceit carried out in the interests of the performer:

> *"They can be, yeah, some people. I've worked with some artists … I remember working with a producer and we had a singer out there, quite a well-known singer. I won't say who it is, but he went out to sing and it just sounded awful and the producer went 'Fantastic! Just do one more like that,' and he went out and he sung it and it was a little bit better and he went 'Oh, it's just amazing.' He said 'Well, I reckon you should do another one because they're just getting better and better,' and then after about half an hour they're actually getting quite good. He looked me and he saw I was a bit puzzled and he said 'If I'd told him it was rubbish it would have just destroyed his confidence and we would never have got anything like that'."* (Pat Stills)

> *"If you're working with a singer…. You know, unfortunately, part of my job is to be almost a perpetual liar, which is awful. They'll sing something and you think, you know, and you have to say 'That's great! Just one more a bit more like that. That's really good!' and they go 'Okay'."* (William Wallby)

Image 7.



A still from a video taken during the recording session at Studio I

The guitarist is playing along to the sound of the percussion and a dummy vocal track being fed through his headphones. In the control room we hear what is being scrutinised, the sound of his guitar without any effects or accompaniment. Source: Simeon and Sonia

4.3 'Clean' sounds

"I like the creak of chairs." (Roger Scope: artist)

The organising logic of multitrack recording is the capture of instruments and performances in a "clean" form that enable assessment and manipulability (Charles Church: engineer). Martin Kato (artist, songwriter and producer) for example, described recording with sound effects rather than a clean sound as a *"cardinal sin...you never record with reverb 'cos when it comes to mixing it you are lumbered with that reverb"*. A 'clean sound' is a recording of a track that has no sound effects and only contains the sound waves from one instrument, and in the case of the drums, even each drum; kick, high-hat, snare, tom-toms, etc. (Harry Stammer, engineer). If microphones have picked up the sound waves from other instruments, termed overspill or bleed, then the producer's ability to manipulate the sound and edit the track is reduced. The same restriction applies if the recording contains sound effects such as reverberation. This is because any treatment made to the recorded track will also act on the sound effect or on the recorded sound waves from other instruments in the room. If, for example

the frequency is changed for a track, this can increase the audibility of other sound waves present on the recording:

> *"You want to get the sounds as clean as possible because if you get it with effects then you can't work with it because then it is pre-recorded. You can't do anything fun with it. You want to be able to add things."* (Jo Berg: producer, artist)

The preservation of later manipulability by the producer is therefore increased if each artist performs his or her tracks on their own. This separation of the band members extends to the separation between the direct sound waves produced by the instrument and amplifier, and the reflected ones created by the room. This can be achieved by placing a microphone close to the audio source and positioning screens round the performer to limit the reflections picked up by that mike:

> *"If that sound in the room is on your voice track, it's there and you can't change it, you can't take it away. So you tend to record things close and add it later because it's more flexible..."*(Barry Katz: studio manager, engineer)

To capture the richer sounds of more developed overtones and the reflection of sound around the room, additional microphones can be placed far away from the screen audio source (Anton Sprake: producer, engineer). These distantly located microphones record the room on separate tracks, which can later be added to the manipulated track of the closely recorded instrument/ voice (Eric Efford: engineer). The capturing of 'clean' recordings from separated microphones is described by producers and engineers as necessary to enable the producer to be 'creative' with the resulting tracks. Creativity is thus an outcome, achieved by the practice of separating performers and sound though the multitrack recording process.

Here is producer Keith Nemo describing what he can do to the recorded tracks:

> *"...when all of that music is recorded you do the mix [down] which I referred to before, which is when you sit down and you play the track from beginning to end and you change the relative levels of the instruments and you can add things like reverberation and effects and things and you can switch them on and off and you can have the reverberation just on the vocal track or you can have a different reverberation effect on the drums. So there are creative possibilities there and you can use what are called equalisers, which are basically glorified tone controls, and you can make the vocal sound very trebly; or if it's too trebly you can make it sound less trebly or bass-y; or you can make it sound like it's coming out of a telephone or you can make it distorted so it sounds like talking over a PA*

system. You can change the whole character of every single instrument because they're recorded separately."

The agency of the producer is also threatened by the appearance of noise made in the recording room. This could be the noise made by musicians when moving, or by parts of the instruments that may buzz or rattle during the performance. These noises may be amplified by any sound treatments such as copying to create multiple layers or by introducing sound effects such as echo or reverb. Producers were alert to such unwanted visitors. Artist Paul Macleod described an episode with his band where a crackle was heard on the mix. With 50 tracks so far recorded, identifying the culprit was time-consuming:

"One of the leads on the overheads of the drum kit was a bit loose, dodgy. We replaced the cable. I remember when were searching for it the guy who was engineering said it is always right at the end. 'I am going to start right at the middle' and it was the first track! What are the chances! We would have found it in ten seconds."

A similar 'hunting of the noise' took place during an observation of a recording session (Studio I). Each track was played until the noise was finally identified in one of the bass tracks. The producer changed the frequencies of the played back tracks to try to reveal the noise. Cheers of congratulations were made by the artist and the engineer when it had been found. As the noise was the vibration of some material on an old bass guitar, the track had to be re-recorded.

The ability to edit together parts from different performances is also part of the creative agency of the producer. The creative act, the construction of the song is in this sense removed from the artist and relocated to the mixing process. Errors in performances can be overcome by 'comping', combining different tracks to provide a version of the performance that never happened. This is the *'fix it in the mix'* approach described during the interviews with engineers and producers (e.g. Pat Stills and Steve Toynbee). Here Paul Macleod describing a conversation with a producer when he was a session musician on a recording project:

" You might do an awesome note but fluff one note. Well that was great but I'll drop you in 30 seconds before that mistake and we will cut and paste it."

Performers thus deliver a number of takes including sections of the song rather than the whole version, sufficient to enable the producer to make adjustments during the mixing process:

> *"Capture everything and edit it later, you know, even if it's 50 takes. That's the beauty again of these days. You can just record stuff and not worry about it."* (Jim Thomas: producer)

The introduction of digital recording technology supports this process by removing the cost of having numerous physical tapes necessary to capture the multiple recordings produced by the multitrack process. In this story from the late 1970s recounted by engineer Harry Stammer, the capture then edit approach of delayed creativity, as well as an indication of the importance of the loss of mark-up revenue by studios from the provision of tape, is illustrated:

> *"We were working on a Gerry Rafferty album and I was in charge of all the multitrack tapes and we were using up loads and loads of multitrack tapes. I mean you couldn't do that these days because they're so expensive, but then in those days that's what everyone did. So we used up about 10 reels of tape and I thought 'This is a terrible waste.' You know, they'd maybe done 20 takes of a song and I thought 'Well, I'll go back over the early ones because everyone's said it's getting better and better, you know, and the early ones can't be any good.' So I went back over a reel early on and, you know, erased it and re-recorded the band and like maybe take 17 went over take 1. So the next day… So we finished the session that night, went home. The next day Gerry Rafferty walked in and the first thing he said was 'Can I hear take 3?' and, you know, I sort of… You know, it's Gerry Rafferty and I'm like 19 years old and I said to the producer 'I've gone over it.' He said 'What do you mean you've gone over it?' I said 'Well, you know, we were…' I remember it now; I remember it to this day. I remember him saying, you know, 'For the sake of a reel of tape?!!!'"*

We will analyse the nature of producer creativity in the following chapter when we turn to the mixing stage in the recording project. Staying for the moment with the recording stage of the project, we can see how the practice of multitrack recording is also significant in understanding the difficulties currently experienced by large commercial recording studios. Aside from the far away miking to capture the reverberation of the sound waves in the room, something which anyway can be achieved during production as an effect, (a facility we will also analyse in the following chapter) the close miking approach of multitrack recording does not require a large commercial recording space allowing for the appearance of smaller project studios. The contradiction involved in the 'screening off' of performers in large recording spaces was brought up by engineer Pat Stills:

> *"Looking back it does seem ludicrous to go to a £1,000 a day studio to record a vocal*

> *using one microphone in a great big room that you then put up all these screens to make it smaller and, you know, I think people have been guilty of that, me included."*

There were variations on the use of multitrack recording that did require larger performance rooms. Studio managers spoke of how, with careful use of microphones, their larger rooms enabled sufficient separation of sound to be achieved while the whole band was playing together (e.g. Polly Apson). Another interviewee, John Hinger, a producer who owns a medium sized studio, referred to the difficulty experienced by some performers when playing to a click track or on their own, set up the whole band and fed the audio signal of one of the musicians directly into the control desk. This is termed DI-ing (direct injection) and allows the musician to be guided by the playing of the band, while the audio of his instrument can be recorded without picking up the other sound waves in the room. However, even at studios with sufficient space to record the whole band, accounts were of recreating a small 'dry' studio space within the larger room. The owner of Studio Q, with a quite large recording room, described how producers would screen the microphones to allow them to control the sound and thus preserve their ability to act once the recording is captured:

> *"Most of the time you screen it off so you can control it more and then add reverb or anything you like afterwards. But if you don't want the sound of that big room because if it is there it is there you can't take it off. You can always add if you put screens and screen it off. You can always add a little spot if you like but you certainly can't take anything away. Again it is down to control."* (Nathan Williams)

To understand the current challenges of large recording studios and the disaggregation of the music creation project we need to include the practices of music recording not just the features of digital equipment. The photo over the page is of the drummer during the Studio I recording session I observed. It illustrates the isolation and separation of artists and sound during multitrack recording practice.

Image 8.

Drummer at Studio I recording session

Note the screens behind which the bassist is just visible. The white material on the left is a duvet covering up the bass drum to change the sound and stop it being picked up by the other microphones, seen pointing at each drum. Source: artists

The practices of close miking and screening off of the room, removes the qualities of large recording spaces from the practices of the recording project. In the process recording studios become more comparable and the terms of their use shift from those of sound quality, to a quantitative calculation of time and cost. This is significant to the discussion of the future of recording studios and will be discussed once we have travelled the entire journey of the creation of musical product.

4.4 Spaces of assessment

I have characterised accounts of the recording process as a division of sound and space into that of performance in the studio, and analysis in the control room. That the producer's agency is achieved by this separation and isolation of sound and people. Let's consider this in more detail by considering the control room and comparing it to the live or recording room.

4.4.1 Rooms and roles

The studio control room is a space designed around analysis, the judgement of the sound produced in the recording room. This requires that the room has very controlled management of sound reflections to enable the close inspection of the sound coming from speakers mounted on the wall and on the desk in front of the producer. These speakers, or monitors as they are revealingly termed, are so called 'flat response monitors' designed to represent equally the range different frequencies within the auditory spectrum of the human ear. The objective is to hear a representation of the sound in the performance room, so that the producer can interrogate the recorded sound and make judgements about the various frequencies that make it up. The difference between the properties of the control room and performance room can be seen in the use of the control room to reach agreements between the producer and artists if there is a difference of opinion over the quality of the recorded performance. In these cases, artists would come into the control room to hear the recording played back and, guided by the producer, would be shown the sound and any adjustments necessary:

> *"Yeah, we've got the control room set up, they will go out and perform, we'll record it, they'll come in and listen to what they've done. Because quite often when they hear what's coming out over of the speakers is different to how they're hearing it when they're playing. They'll say 'Oh, that's interesting, I'll change that bit,' or 'That's not quite how I thought it was coming over. I'll change that.' You know, I'll adapt that and do more takes."* (Barry Katz: studio manager)

This control room discussion is structured via A/B comparisons between different tracks. Using the control desk, producers repeatedly played different tracks, comparing them and pointing out differences until the artist agreed and returned to the performance room to repeat the performance, or section of the track, as necessary.

> *"If they rebel and I believe that they're wrong, I'll play it to them and I'll show them and they'll go 'Okay. Yeah, I see that,' or 'Can I just fix that little bit? Because that's a problem'."* (William Wallby: producer)

The use of the decision making properties of the control room's management of sound waves by the producer, who is able to hear all the tracks as they are recorded, identify desired changes and formulate an argument before bringing the artist in to the control room, is part of the constructed

nature of the producer's agency. A further control room specificity adds to this ability. For, unlike the recording room where there is the attempt to create an even room so that microphones can be set up in different places without the nature of the sound waves collected being too altered by the shape of the space, control rooms are focussed on the producer's chair, the 'captain's chair' as the artist I observed at Studio I called it, at the centre of the mixing desk. This produces an inequality of sound within the room, as illustrated by engineer and producer Steve Toynbee, here describing a control room at Studio B:

> *"Like downstairs in studio 1, if you sit on the couch there's lots of bass, because the room's tuned so when you're sitting at the desk you hear what's right. So when musicians come in and sit at the back they go 'Wow, that's a lot! The bass it a bit loud, ain't it?' So you have to say, you know, 'It's fine.' Or if the bass player's going, 'The bass isn't loud enough.' 'Just go and sit on the couch'."*

So not only is there a role creating division, based on sound qualities, between the control room and the recording room, there is a further enabling division within the control room itself. An additional example of separation and control, with artists and others such as record company executives being excluded from the balanced sound needed to be able to make judgements about the quality of the performance or the mix of tracks. The boundaries of this 'sweet spot' vary according to each room, but can be very sharply delineated. Producers and engineers can identify the effect of the room on different sound waves by testing the audibility of sounds produced by the mixing desk. Eric Efford, described how he investigated the spatial division of sounds within the control rooms he was working in:

> *"The desk has oscillators. So say you put 100 hertz on, it's often the bass that gets lost. Put 100 hertz on, turn it up and just walk around and then you'll hear sometimes you're standing in silence and then other times you're getting loads of it."*

Judgements of the recorded performances of the artists are also made on how the recording will sound in the mix of other tracks, and with sound effects added to it during the production stage. This use of future actions to determine the desired performance qualities captured during the recording process, further establishes the producer's decision-making power. Simeon of 'Mountain Fire', described what happened when a session musician, a singer, was brought in by the producer (Alan Scholes) to add backing vocals to their song:

"...when he actually recorded...both of our hearts dropped because he sounded, we thought, so horrible. He was like (sings in a clichéd and overly energetic way). I was like 'Oh my God, what the hell have we got in?' I really thought, 'Is this guy Alan insane?' Because this guy is just like the opposite of our music...what was so bizarre was the Alan was like, 'Great man, Great man!'"

The artists later raised their lack of belief in the track, so Alan:

"...dropped it into the mix and put an effect on his voice and I could have fallen off my chair, he just understood this guy's voice and how it could fit into the song."

In this way, discussions with artists over which take was the best one, if not resolved by A/B comparisons, are referred by the producer to later actions that he will perform. This use of the 'fix it in the mix' decision removes the debate from the artists and relocates it within the producer's actions. Sometimes the 'fix it in the mix' response to possible artist led assessments of the recorded song is supported by producers carrying out indicative mixing and production actions during the recording process. Steve Toynbee described this approach:

"While you're doing your first take you start mixing because the better you can make it sound, the more you know what it's going to sound like when you do start mixing, and also when the musicians come in they want to be able to… You know, a lot of the time musicians can't or they don't understand how much more you can do to the sound later on, so you want them to come in and go 'Yeah, that sounds really good,' rather than 'Oh, this is a bit… you know, the bass is bit something or other, you know?' and then you go 'Well I can fix it in the mix' you know? The more you do to show them how it can sound, the more they're happy with it and the more they feel better in the live room when they're playing."

Editing and mixing actions conducted by the producer during the recording of individual tracks not only forestalls artist led assessments of the recorded takes, it can obscure the changes made by the producer to the artists' performance. Singer songwriter Roger Scope described an exchange in the control room when listening back to a recorded take. Though not discernible by just listening, he saw the Pro Tools screen indicated an edit had been made at a certain point in the track:

"'No, no, no, there's a cut there. There's a cut. What did you cut out?' and he's going 'There was a little squeak and I just…'. So you've got to say 'No. Listen, undo, undo, undo. Keep the squeak in. Let me hear it as we just did it'."

The control room can thus be viewed as a place of authorship, assessment and decision making. The spatial distribution of artist and performer, plus the design and materials of the rooms organise the process in support of the producer. The A&R representatives of the record company are not, aside from the producer's occupation of the control room's sweet spot, as spatially enrolled as the artists. On visiting the recording sessions they engage with the process and contest the organisation of decision-making power previously described.

4.4.2 A&R agents in the control room

> *"We all call them 'Um and Arrs' you know rather than A&Rs."* (Cathy Danton: record label manager)

The appearance of A&R agents in the control room varies, from being a familiar feature to occasionally popping in to see how things are going. Robyn Fitz, an ex-A&R agent and now producer manager, highlighted the importance of the A&R person feeling involved in the record. As once the recording project is completed they will need to sell it within the record company, in order to secure sufficient marketing and distribution budgetary support. This need to stay in contact with the project, was supported by studio owner, Gerry Harley who identified the distance the A&R agents needed to travel from their head office to the studio as a factor involved in their support of the producer's choice over which studio to record in.

Joan Smith, ex-A&R representative for a large multinational record label, and currently studio manager at Studio K, felt that A&R agents involvement during the recording process had decreased and was now characterised by intermittent visits rather than one of sustained contribution. A view supported by Robyn Fitz:

> *"I do a lot of sessions where the record company and I just agree a budget with the session, record company signs my budget and that's it. That's it you don't see them to the very end."*

As part of this analysis, it is suggested that record company involvement in the construction of the final, released song, does indeed come in following the mixing of the song. The nature of

this intervention will be analysed in Chapter 6. Whatever the degree of contribution made by visiting A&R agents during the recording process in the studio, interviewees were not positive about it:

> *"I know a lot of producers are very down on A&R men and yeah, some of them are more marketing men than music men and, you know, they have their place. They're important as long as they don't get involved with the artistic [side of things]…"* (Ian Wood: producer)

Producer and artist Dan Shepherd, described a recording session where the judgements of the A&R agent were felt to be holding up the progress of the recordings and took drastic action:

> *"So actually what we did in that case was on the third day we booked into a different studio and didn't tell them. They were paying for two studios, but it probably took half the amount of time anyway and so we got the record that we wanted."*

To justify this exclusion, A&R agents were portrayed as not understanding the music recording process (Poll Troy: producer), of being outsiders (Roger Scope: artist) with little appreciation of the challenges of managing a recording project (Jim Thomas: producer):

> *"...the brief that I had for this project was to make it sound like somewhere between heaven and hell. Okay? That was the A&R person."* (William Wallby: producer)

Producers and engineers cited attempted contributions made by A&R agents during the recording process in negative terms, as unwelcome intrusions into their area of judgement that were difficult to resist, but ultimately ineffective:

> *"I don't mind other people working on it, but there is nothing worse than a guy at a label who doesn't produce records. All he wants to do is turn the vocals up so he can get a co-producer credit. So he can turn around to his mates and say 'I just made, we've just done the so and so record with so and so.' No you didn't! you turned up, wasted three hours by sitting there with the volume knob in the studio."* (Nigel Harris: producer, studio owner)

> *"He's a nice guy, but he always has to come in and give his thrupence worth and you think 'Xxxx [name withheld], you don't know what the fuck you are talking about mate!' So me and (the producer) just go 'Yeah, Yeah. Good idea, Yeah. Great'."* (Owen Faulks: engineer, studio owner)

The A&R agents' relative lack of understanding of the mixing desk in the control room can be exploited in the interests of the producer. In previous studies of record labels (Gander and Rieple, 2004; Gander, et al., 2007) I had been told of the dummy knob trick used by producers

(Cathy Danton: record label manager). This is where the A&R person, if suggesting a change that the producer doesn't feel is merited, will be pointed towards one of the many knobs on the desk and invited to make the required adjustment. The knob however is not linked to the mix and no difference results. The action of the 'change' and the difficulty of doing A/B comparisons for someone who is not a sound recording professional, make it difficult to determine differences, and the A&R agent is unaware of the lack of change. Owen Faulks, engineer and owner of Studio F, a small but high specification studio, offered his own example of this deception:

> *"You reach for the EQ. The EQ's in, so you tell them 'I'll just put the EQ in.' and you take it out and then you start to fiddle with the EQ and they go 'A bit more. A bit more,' and they go 'Yeah, that's it.' Job done."*

We shall see how the A&R agents and executives at record companies manage to get around this asymmetry of knowledge and difficulty of making choices whilst the producer is in the control room in Chapter 6. At this point in the analysis, it is sufficient to observe the largely successful exclusion of the funding organisation, the record company, from decisions made during the use of the recording studio by the producer and artists. The walls of the studio appear to cocoon the project (Ruth Pickard: studio manager; Eric Efford: engineer) and a combination of spatial control, and fix it in the mix appeals secure and protect the producer's ability to organise artists and control the decision making process. However, something does move across the sound proofed boundary of the studio walls. During the project, CDs of the recordings are sent to the record company (Joan Smith: studio manager). These CDs and others that follow, during, and at the end of the project, carry information that enable the record company to re-enter the decision making process and contribute to the commoditisation of the recorded song. We will track this important escapee later on in the analysis.

Conclusion

The studio has been analysed as an organised and organising space that associates practices with artists and producers, and in the process describes their degree of agency. We have seen the importance of the physical infrastructure of the studio and the separation and isolation of artists and sound to enrol them in performative practices that produce the power of the producer over the process. Placed in a room designed to perform and capture sound, artists are sent sound designed to support their performance, whilst the producer receives a representation of their sound suitable for judgement and analysis. The multitrack recording process thus decomposes both the band and their music transforming them into components to be managed, collected and stored in the producer's desk. Recording involves the capture of sound and artists. This disciplining of artists and sound is carried out in the interests of the producer, whose judgement on the performances of the artists and the sounds they help create ensure, that following the recording (practices discussed in the next chapter), they will be able to exercise their 'creativity' and produce the desired mix of tracks and sounds for which they are rewarded. Producer power is thus an achievement, delivered by the enrolment of artists, sound and space. There are then two types of performance that take place in the recording studio, the musical performance of the artists, their musicianship and delivery of the song, and the performance of power relationships.

We can now turn to the question of how these tracks are organised and treated to re-form the song that now resides, named and disassembled, in the producer's desk, into a musical product. This will include the editing and mixing of the recorded tracks. What is the nature of the creativity afforded the producer during these actions? How does the use of space change when the task moves to the organisation of sound without the artists' performances? The use of space during this next stage in the process of creating musical products is linked with the exercise of creative actions and judgements of the producer, and also related to the type of involvement of the recording studio in the development of the project from this point onwards. To investigate these questions we will need to analyse the types of sound effects available, and determine how and what qualities are constructed and used to frame the systems of judgement used by the

producer. In so doing we will see how the sound qualities present in consumption and distribution networks and associated with project formation discussed in Chapter 3 are linked to the decisions made by the producer during the editing and mixing practices.

Chapter 5

Producing Sound: Covering their tracks

Introduction

> *"These parts are great and now we can move on to making them sound how we want."* (Eric Efford: engineer, producer)

The recording project now moves to a recombinatory moment, where the separated parts of the song, the recorded tracks, are examined, manipulated and organised to reform the song. In this chapter we will analyse the practices involved in this process of construction and reformulation, the editing and mixing of the recorded tracks. Tracing these practices reveals the poverty of the transmission model of production that considers music production as something that happens to music, rather than a process that constructs it. The difference is critical. Listening to producer and artist accounts of editing, sound manipulation and mixing allows us to identify how and what product qualities are created and to analyse how the systems of calculation that operationalise them, as with the recording practices of multitracking that we covered in the previous chapter, also distribute power between the recording project participants. Problematising the music product this way also reveals how production and consumption are linked through the shared use of product qualities achieved in the recording studio. Rather than contemplate the gap between production and consumption as in conventional accounts of the popular music industry, this analysis identifies how the studio and the outside world are interpenetratively combined and the musical product fixed as an object suitable for distribution and market exchange. We are thus able to explain not only how the different interests of the protagonists are aligned, and how producers manage recording projects, but also how the product qualities of the recorded song are achieved and fixed across the production/consumption

network. In a way we can say that producers not only organise the creation of musical product but also the act of listening and reproduction during live performance and broadcast. This is a theme that will also figure in the analysis of post-production practices conducted in the chapter that follows this, Chapter 6.

Although the analysis in this chapter reveals the way producer agency is performed and achieved, this doesn't mean it is unopposed. For example, one of the points that will be highlighted is the way that sound is visualised (or translated, in Latourian terms changed), and how producers enrol such representations of sound to create frames of reference and systems of calculation that enable them to manage and control the decision making process. However, visual representations of sound also reveal the decisions of the producer (unlike those made by ear), as we saw when Roger Scope cried, *"Undo Undo",* and their attempt to impose irreversibility on the process of creating a musical product. This aspect of recording practice will be elaborated and we will see how it offers an opportunity to artists and record label representatives to participate in decisions, and possibly challenge the views of the producer. Challenges to the discretionary power of producers continue even after the producer hands over his final mix to the recording company, and will therefore play a key part in the analysis of the following chapter when we move to consider this juncture.

This chapter will start by considering accounts of editing practices, move on to examining mixing decisions involving the construction of 'real' or 'natural' sound by the producers and finally examine the way producers construct the listeners' experience and preserve their decisions during the broadcast of the song. First, as a way of sketching out the issues that will be discussed, a snapshot of the mixing session I observed. The recording project of Simeon and Sonia, led by producer Alan Scholes, has moved on to mixing at Studio J, a high specification, professional facility, in London.

The mixing room looks like a spaceship, decorated in red hues with a red leather sofa and chairs. The room, in contrast to the one I last visited (Studio I) is brightly lit and dominated by a

very large mixing desk with 72 channels. The desk is facing a large computer screen banked by wall-mounted speakers. To the right is a separate dubbing room connected by an observation window. Behind the desk is a bank of outboard equipment. The walls in front of the desk are all obtusely angled, while the walls behind it are covered with sound absorption panels. Alan the producer is sitting at the desk and the two lead artists, Simeon and Sonia are sitting on the sofa at the back of the room.

We sit staring at Alan's back while he plays and replays a number of vocal tracks. As the track plays he moves the faders and occasionally swivels round to adjust a knob on the outboard equipment. The section of track being played begins to shorten and it becomes clear Alan is focussing in on something. Other tracks within the vocal are dropped and one voice, the female vocal, is left. Sonia, a classically trained singer says, *"Yeah, I think I'm flat"*. *"Yeah,"* says Alan *"Let's have a look."* He opens a box on the computer screen and up pops a dense band of sound. He clicks and clicks the band until the shape of the sine wave becomes clear. *"Yup there it is."* He clicks again, moves the mouse and then plays the track again. We all listen.

Satisfied with the change, Alan returns to playing and replaying the vocal tracks. Sometimes the sound comes out of different speakers arranged on the mixing desk, sometimes from the wall mounted speakers. It is extremely tiring listening again and again to the tracks. I am relieved when Sonia raises a query and interrupts the repetitions. She thinks another note is flat in her chorus. Her tracks are once again separated from all the other vocals and the screen representing the performance is brought up. The artists crowd round it. Alan explains that he knew about that but he had left it. This was because at that point she was singing with the session singer and he felt that if the tracks were too close in pitch then the resulting sound would be too *"thin"*. It is better, he explains, if you are a little out, not a lot but a little. It sounds better that way.

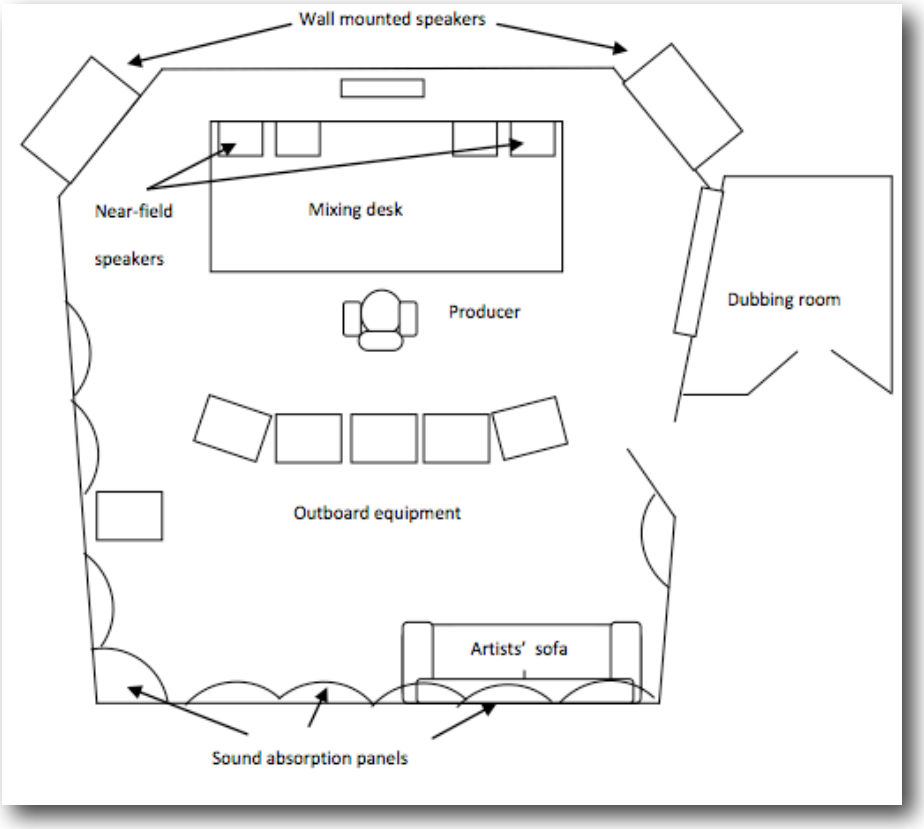
Alan asks the studio assistant who is sitting in the corner of the room about the outboard equipment. They discuss the kit and make some adjustments. He turns to the Pro Tools screen and makes some changes, then plays the track again. *"Yes!"* he cries in a happy tone *"that is*

more like it... just like analogue." He turns to the artists, *"That's what Pro Tools is supposed to do!"* Simeon agrees, *"Yeah, sounds more human now, you know?"*

More of the song is now being played, but it varies from play to play. Looking around I see a large number 18 on the computer screen above the desk. There are 18 mix versions. Alan plays the different mixes, the number flicking up and down depending on which one is being heard. They are very similar to my ear. *"I like number 14"* says Simeon. Alan mentions a few other mixes, and seems to prefer them. Number 19 appears. *"I liked number 7"* whispers Sonia. Then I hear a song by Mika, a currently successful Pop singer, coming out of the speakers. I ask Simeon and he explains that they have been listening to it all afternoon, using it to try to get something similar to Mika's sound, which he likes. The screen on the mixing desk bounces with the sound waves of the two songs.

Alan is listening repeatedly to Simeon's guitar track. *"What's up?"* says Simeon. *"I like the energy, just not the sound,"* Alan answers. He begins adjusting the sound by moving the faders and clicking switches on the desk then plays it back through the speakers. There is a massive variation in sound quality between the different plays. Sometimes he plays the tracks through two huge speakers and the sound is enveloping, it is loud, clear and good. Then he switches to different speakers and the sound is far less full. It sounds thinner and less impressive. Back and forth he goes. *"Sounding good,"* say Simeon and Sonia. *"Getting there,"* responds Alan over his shoulder, going back to switching between the different speakers. Simeon gets up from the sofa sits in a chair at one of the mixing desk and scouts it over to the centre of the desk near the producer. *"Can I sit in the captain's chair?"* The producer doesn't respond. Simeon rejoins us on the red sofa a few minutes later.

Image 9.



Studio J Mixing Room layout

Source: Author

5.1 'Seeing' sound: editing tracks

> *"I mean editing's a big thing in music production. We probably spend at least 30% of our time in studios editing."* (Keith Nemo: producer)

Editing involves the selection and creation of tracks that will be combined during the mixing process. This can involve the combining or 'comping' of different recordings into one, organising the timing of the individual tracks (when they start and stop as well as the speed), and adjusting the number of beats per minute (bpm) of the song. Editing was often couched in terms of it being a matter of 'cleaning and tidying up' (e.g. William Wallby: producer and Roger Scope: artist). This casting of editing as a cleansing process is not a neutral act; it is a constructive and enabling one. Firstly, it requires the application of musical qualities that can significantly change the final sound, and secondly, it involves a rendering of the recordings into

a form that will enable and widen the producer's power over the song. An informative illustration of this double act is seen in the removal of the breaths of the vocalist (James Daniels: producer) or the squeaks of chairs or instruments picked up by the microphones during the artist's performance (Roger Scope: artist). This act of purification is required prior to the application of sound effect changes, such as the use of compression. Compression involves reducing the dynamic range of a recording (the difference between the quietest and loudest parts) in order for the average volume of the whole recording to be increased without the peaks of the loudest sections distorting (a change in the wave form and thus the sound) and creating an unwanted noise. Compression then may increase the volume of the quieter sounds and in the process reveal such noises, which, in the original form were undetectable amongst the rest of the recording. By 'cleaning' recordings of the sounds that can accompany performance such as breaths or creaking chairs and stands, the ability of the producer to make changes to the recordings is therefore protected.

In addition to rendering the recording into a quality needed for sound based judgments and to enable changes to be made by the producer, the comping of sections from different recordings to form one seamless version also constructs the musical qualities of the song. These interventions and replacements run from decisions on individual notes, as in the quote from engineer and producer, Steve Toynbee:

> *"Once you've got the basic tracks, you might possibly edit between tracks or do a couple of drop-ins just to fix, like the bass. You know, there was a bum note on the bass, so you just drop in that one note or something."*

To longer sections such as choruses or verses, as in this example from William Wallby describing what he will do to the artists' performances:

> *"'Okay, take 3 is just fantastic, but I just love what you did on the acoustic in take two during chorus two.' So I'll take that and I'll put it in."*

These examples of edit decisions are more accurately viewed as acts of replacement and transformation, rather than merely one of repair. The producer is making something new from the parts, a process of creative assembly that replaces the artists' performance with his own

version. Important in this act of construction is the translation of the recording of the artists into a representation of sound that enables calculation and measurement.

5.1.1 Visualising sound

For the producer, each performance is visualised and displayed as a waveform and placed into a timing grid of beats per minute. Using these grid lines and a clock in the software, the performances can be examined, disassembled and combined. This 'logging and clocking' process (William Wallby: producer), of disciplining the recordings using sound representations against time, allows the producer to *"stretch or bend [the note to]...make it fit the time line"* (Jo Berg: producer). In this sense the producer can be seen as a combination of conductor and performer. Charles Church described the way, having captured the recordings, he placed them within the grid system and edited them into a linked whole:

> *"Well, we had one song that we'd been working on that he's been writing, and I think I had it in about 10 different tempos and keys - all subtle changes. You know, down a semitone but up two beats, or down two semitones and up three beats, and with Pro Tools you just bang them down."*

Measuring artist performances against the grid lines on a computer screen exposes rhythmic variations which, combined with the need to align all the separate tracks so as to perform sound production changes, appeared to encourage the standardisation of timing within the song and thus the alteration of the artists' performance. Joe Alastair highlights the situation:

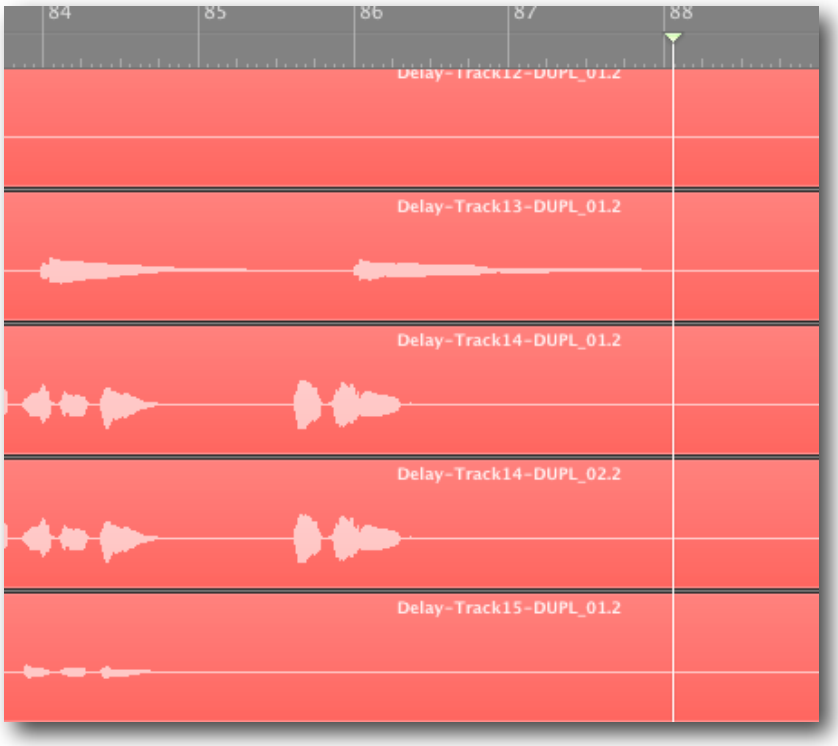
> *"There are no records now that don't have some form of rhythmic tidying up. Even a Rock band most things have been clinically sorted: the protocol allows you to take an audio signal and move it around to make it more precise. If you listen to early Rock music, the tempo is often all over the place. The Doors starts at 90 bpms and ends up at 100 bpms. That would never happen now. The focus is on clinical precision right or wrong."*

To 'quantise' (as producers term it) or regularise the timing of the beat and tracks, is a quality that spreads throughout the whole production network. It is a necessary feature of the tracking approach of recording projects, and thus links editing to recording practices, but it was also

implicated in the valuation decisions of record companies and broadcasters. As studio manager and producer Cliff Target, reflected during his description of editing:

> *"Actually the record labels or the radio stations, they are… it would be considered to be unprofessional if something is not rhythmically tight, to be honest."*

Image 10.



Measuring Sound

Close up of editing screen with 4 tracks (displayed horizontally) and the time code (in seconds) at the top. The vertical line pans across the tracks as they are played.
Source: author

The important point to stress is that the effect of editing practices is to create a quality that is not possible to perform, only to reach through the producer's interventions (Joe Alastair: composer, arranger). The alternative, performers playing together and using their own co-ordinated judgement to keep in time and keep together is denied by the organising logic of recording; separation and isolation designed to enable this construction.

That said, the standardisation of tempo and accuracy on the beat across the song was not always welcomed by producers and engineers. In their estimation, the grid referencing system could give an unwelcome rigidity to the performance:

> *"I'd sooner have one with good feel with the odd dubious bit in it than one that's been, you know, made turkey rigid."* (John Hinger: producer)

Owen Faulks, an engineer who specialises in percussion, and therefore someone expected to value accuracy, also felt that a gentle variation in tempo was preferable:

> *"Just let the tracks breathe, you know, literally that and that's what it's all about really."*

Concern over the possible negative effects of creating a clean, perfectly timed recording, were present in descriptions of an occasional occurrence in the recording project, the realisation that midway into the project the recorded studio version was not as good as the demo recording the artists and the producer had began with (Jeremy Hope: composer, artist; Ron Cheyne: record label manager). This may be connected to the previously discussed challenges of performing in the recording studio, and also related to the increased excitement felt by the musicians soon after creating the song (when the demo is usually carried out), an excitement that can abate in the time it can take to reach a recording studio (Simeon: artist). The perceived failure to recreate the feel of the demo recording during the recording project is assembly can also be linked to the use of grid editing. Jim Thomas referred to the demo problem as 'demo-itis', and on realising the project wasn't going well returned to the demo recording and analysed it:

> *"'What was special about that? Oh God, yeah, he's really loose on the chorus. He's not so tight and, you know, this note is a bit longer there,' and, you know, really kind of analyse it and re-do it."*

Thomas is suggesting that slight deviations in timing may be responsible for producing a more valuable outcome. This is an indication of an important aspect involved in the assessment of sound quality, the presence of errors, and will be discussed later in this chapter when the practice of mixing is analysed. At this point it is necessary to continue with the analysis of editing practices and the objects used by the producer to perform them. In this respect Owen Faulks made an interesting exclamation when discussing editing decisions:

> *"I mean yeah, I'm all for correcting and moving stuff, but why does it have to be 'in time'? Why does it have to be bang on a grid?*

One answer is the character of the measurement tool itself, the computer screen grid line and clock. Each track can be clicked on to reveal progressively greater levels of detail. The digital equipment allows for a note that at a certain resolution appears in time, to be mined to increasing depths of definition until the beat of the sound wave is shown as separate from the grid line marking the defined beats per minute:

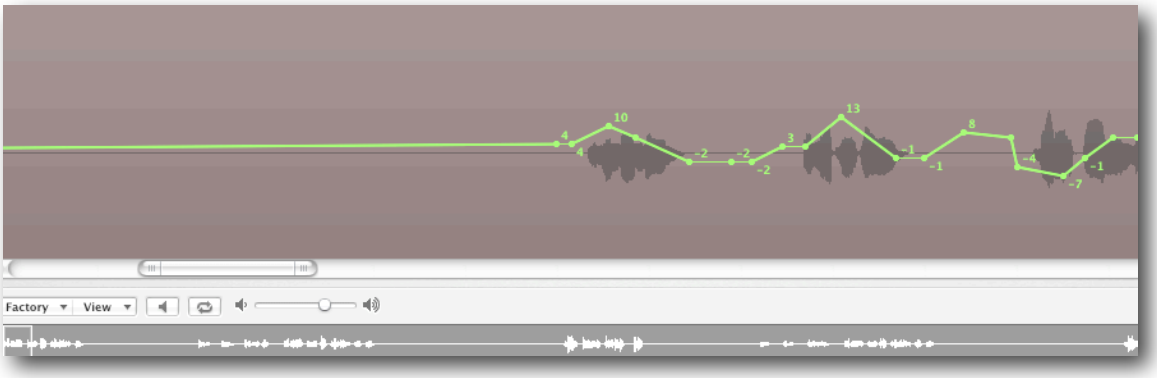
> *"A lot of people use their eyes rather than their ears, you know. They look at it on a grid and go 'Oh no, that's late,' and you go 'Well no, it feels right'."* (Pat Stills: engineer, producer)

Analysis of sound using a visual representation, rather than an aural experience, may thus encourage the producer to request the software to move the beat to exactly the beat of the pre-set time. The relationship between computer screen representations of sound and the decisions of recording project personnel is an interesting and revealing one. There are two ways recordings are analysed, with the ear and the eye. As producer John Hinger commented when describing how evaluations on timing were made:

> *"Well, any problems in the drum track will be really exposed when you try and play, you know, a rhythm guitar to them. If they're lumpy, if they're slipping in and out of time, that's when you'll know it… or look at them against grid lines on the computer screen."*

The design of rooms to enable the ear of the producer to interrogate sound has been discussed in the previous chapter. The enrolment of the eye, critical during the editing process, is achieved through the representation of sound, as a waveform on the computer screen of editing and production software such as Pro Tools or Logic. As was observed during the Studio J mixing session, the visual data of the sound waves can be used to analyse sound in terms of timing and pitch. The picture below is a close up of a pitch shifting and timing editing screen. The green lines show pitch corrections for a represented segment of sound indicated by the small white box at the bottom of the image at the extreme left.

Image 11.



Correcting Sound

Pitch correction and close ups of sound. The green line is the producer's action on the sound made by the artists.
Source: author

Matthew Hane, a senior manager with a large hardware and software audio equipment manufacturer, described the use of visual information as a benefit, as it removes the subjectivity of a person's ear. While ears can be different, and describing sound a challenge (an issue that will be discussed later in this chapter), the visual representation of a sound wave can be viewed in the same way by artists, producers, engineers and record label representatives.

5.1.2 The eye and the ear

Matthew Hane's description of the design objectives of the materials and software used during the recording project were set within a narrative of connection, of constructing links between the equipment and its user. During the design of new equipment and software, Matthew works with users trialing the kit. Design features that weren't liked by the trialists were those where the user said, *"I just feel less connected with it somehow."* Accordingly, efforts were made to build these associations between the user and the equipment through sight (lights, meters, screen graphics), sound (flat response speakers operating in a treated room) and touch (faders). So, in addition to meters and screen graphics, a system of lights engages the user in the judgement of the sound. Using the traffic light warning system of red, green and amber, the lights flash in different patterns to indicate particular audio events such as distortion, pitch errors, phasing (interference between similar wave frequencies) and clipping (the cutting off of a sound wave's

peak). These signals were turned into prompts requiring attention, by remaining lit after the event had passed. Users who may have missed the signal or not heard the event during playback are thus presented with the judgement of the equipment. Using the same example employed by ANT writers Akrich and Latour (1992) to demonstrate the actor-network concept of collaborative agency between people and objects, Matthew Hane described the relationship between producers, and the equipment he makes, in the following terms:

> *"You know, like opening the door is kind of like… you know, it's nothing too much - it's the handle and then the door opens. But actually all sorts of things about the design and shape of the door is telling me whether I should I pull it or push it without me having to think about that very much. And the handle also sort of tells me when I've gone enough to open the door and when I've not gone enough to open the door and it tells me like which way to grab it and twist it. You know, all those things are quite complex, but you don't think they are. If you ask someone 'What is there to opening a door?' They'd go 'You turn the handle and it opens'."*

Producers were concerned at the use of visual data to make assessments over sound recordings (e.g. Jim Thomas), regarding the screen, or the series of blinking coloured lights as competing with their powers of judgement derived from what they hear. A view illustrated in the following quotes:

> *"The eyes can alert you to a problem, but you've got to listen to it and if you hear the problem, then obviously you do something about it, but if your eyes are showing you something but the ears aren't, then… well, I'll spend a bit of time trying to check it with hearing, but if I'm not hearing it, I'll leave it. I trust my ears more than my eyes."* (Charles Church)
>
> *"Yeah, I don't look at the screen to tell me that it's right. If I hear it's wrong, then it's wrong and I don't care what the screen says."* (Owen Faulks)

Interviews with producers and engineers thus revealed an ear versus eye analytical framework, a struggle between two rival systems of calculation. With the ears being the judgement of the producer and the eyes the view of less qualified and restricted objects. The representation of sound as visual information was felt to be a degrading move that took the attention away from what, as in the accounts of songwriting, were the needs of the song. Producers' assertion that they were speaking for the needs of the song was a way they responded to the 'danger' of looking rather than listening (Ian Wood). Pat Stills recalled a conversation with Paul Weller, who, after discovering that Pat had just done some lecturing to music technology students, said:

> *"Tell them not to forget… They concentrate on the screen and the mouse all the time. Tell them not to forget about the song."*

A particular problem raised by producers that was associated with this matter of visual over aural systems of judgement, concerned the use of screens by artists to assess their recordings. Producers described having debates with the artists in front of the screen (e.g. Bill Sykes). The visualisation of sound gave the artists something to discuss and question the producer's judgement. Ian Wood's response to this rival information was to turn off the screen:

> *"I mean some bands, when I'm playing the music back to them, I can see them watching the screen and I'll turn the screen off. You know, I'll turn the screen off when they're watching it so they don't watch the cursor and they don't know what's coming next and so they have to listen like everybody else would. 'Does that really bother you now?'- you know, now the screen's off and you can't see it?'"*

While the screen can indeed be turned off, its existence and representation of sound continues to be available. The genie is out of the bottle, and visual representations of sound can be drawn on by artists, an alternative to the authority of the producer available to contest or scrutinise the producer's decisions and control over sound. The activity of editing described by practitioners in this section, was one in which the quality of accuracy was enrolled by producers to replace the performance of the artists with their own judgements and interventions. The equipment used to visually represent sound and enable, as well as demonstrate, the artist 'errors' that required the fixing act of a producer, could also be drawn on to challenge the producer's private system of judgement, their ears. The next sections which analyse accounts of mixing and manipulating sound, also involve representations of sound used by producers as systems of calculation that construct product qualities beyond those achievable by the artists during their original recording of their music. In the process we see how the musical qualities of the artists' performance are replaced, or translated into the sound qualities managed and created by the producer.

5.2 Changing and arranging: mixing tracks

> *"Today the producers are more or less the artists in a way because they control the music, they control the sound."* (Anton Sprake: producer)

After the recorded tracks have been edited, producers carry out two linked tasks, to evaluate and manipulate the sound of the individual tracks in terms of their tonal qualities and the characteristics of the sound envelopes for each note, and to decide on the mix of volumes and positions on the stereo spectrum of the tracks when combined together to form the song. Important in this task is the producer's problematisation of sound as an unruly and hostile phenomenon that requires the interventions of the producer to organise into a mutually supportive arrangement. In performing this act of organisation and discipline, producers create a sonic quality that is associated with the artists and allows the song to be placed amongst current music genre classifications. This is significant for two reasons. Firstly, it creates product qualities (sound characteristics) that reduce uncertainty over the value of the product by mimicking currently successful products (songs) and signalling to consumers that the song belongs to the group of music they prefer. Secondly, in constructing this sound, producers are associated with the (possible) success of the product establishing a degree of dependence between themselves and the artists and simultaneously advertising to other artists and record companies, their ability to make this successful sound.

5.2.1 Arranging sound waves

The challenge of mixing is linked to the interactive nature of sound frequencies. To create the final sound, producers arrange the frequencies of the recorded tracks collected in the mixing desk so that when played together their frequencies and volume don't cancel each other out and change, or render inaudible, particular instruments. When this happens part of the harmonic spectrum of the instrument can be lost and the resulting sound is described as 'thin' (Larry Jenkins: producer). The objective is to get a 'bigger' sound made up of fuller frequency ranges by balancing out the volumes and frequencies of the individual tracks so that each instrument

can be discerned by the listener (William Wallby: producer). As discussed by producer and artist, Martin Kato:

> *"Well you can imagine when you have recorded all your parts...classically you have got them across your mixing desk and if you have them all up [played without alteration] then you would just have a cacophony of competing frequencies. So when you learn how to mix you learn that certain frequencies cancel each other out."*

This management of sound frequencies is achieved by changing the characteristics of the individual sound waves, making them louder by adjusting the relative decibel levels of each track and changing the frequency or pitch of instruments. As tracks can vary in volume during the performance, compressing the track (reducing the decibel range) allows the producer to position the track within a range of volumes, without periodic interference with other tracks. Frequencies, as with volume can, if too close, obscure, or mask their audibility. Equalisation, or EQ-ing the sound waves refers to the manipulation of the frequencies within the harmonic spectrum, commonly referred to in terms of top end and low end, of a recorded instrument:

> *"Now that's where frequencies and harmonics and colouration become important. Say the guitarist is actually playing the same notes as the keyboard physically - G, C, E or whatever - obviously the instruments sound different because of all the harmonics involved. So although they're playing the same notes, you might choose to bring out the higher frequencies in the guitar by EQ-ing high like at 4 kilohertz as opposed to EQ-ing the piano at 1. So although they're playing the same notes and they're panned on the same side of the stereo mix, you kind of appear to make the piano sit underneath the guitar."* (Ian Wood: producer)

The objective, through volume, sound effects such as reverb, and frequency boosting through equalisation, is to create a mix of frequencies and volumes that allow all the different instruments to be discernible within the mix of frequencies that make up the song while retaining a musically harmonious relationship[5] (Derick Lawson: artist). By positioning the tracks across a range of frequencies (Ira Baker: producer, artist), the different instruments don't interfere with each other, and the overall sound is not either 'thin' nor *"muddy and clogged"* (Eric Efford: engineer) with many frequencies. Editing was concerned with the quality of accuracy, here in mixing the system of calculation is that of separated frequencies. Important

[5] A connected and illustrative point to note concerns the tuning of a piano. Piano keys are not tuned using octaves based on fixed multiples of frequencies but are tempered; tuned to frequencies that work when all the notes are played together in chords or scales. In tune is thus not a scientific absolute but a relationally achieved outcome.

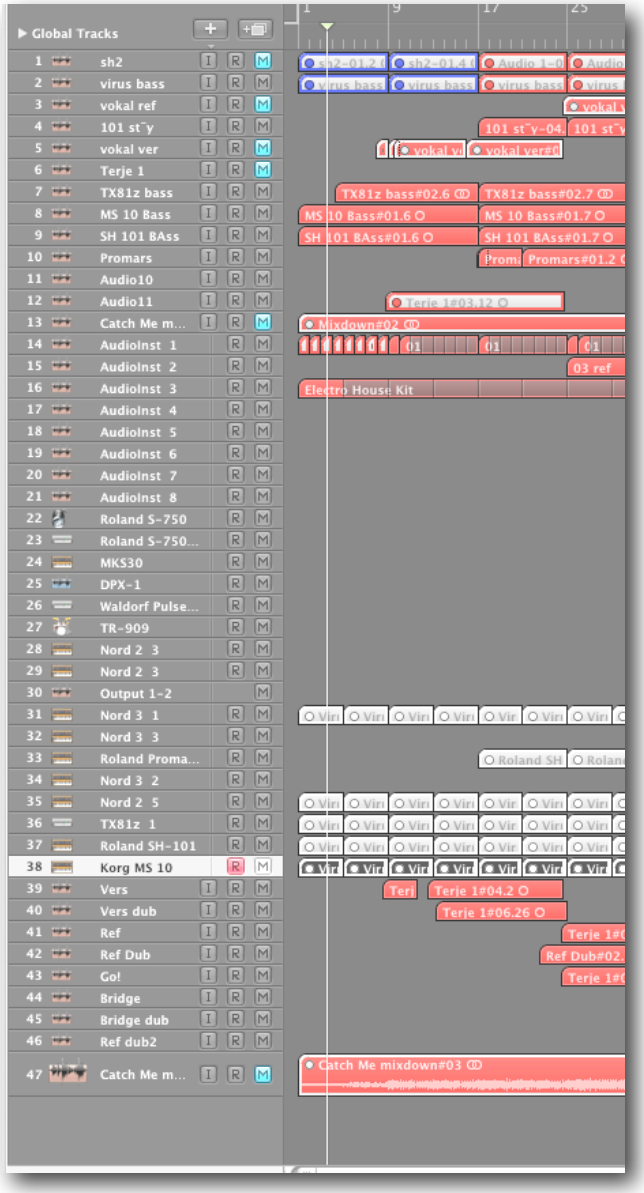
to recognise here, is that in both cases these qualities are not achievable during the artists' performance.

With mixes that can involve 70 tracks or more, the challenge of separating frequencies is significant and made more so by the interconnected nature of the mix. Each change can create new effects on the other tracks. Producer Cliff Target describes the problem:

> *"I mean in a mix it's pretty much like in real life. Everything is connected with everything. You decide you like to push the low frequency of the kick drum and then you see 'Okay, this is affecting all kinds of things'. You can't just do that. You have to do adjustments in other sectors here. Everything is fighting with everything to get its information through..."*

Image 12 over the page, is a screen shot of an early stage of mixing a song 'Catch Me'. The tracks are in horizontal bars (they can be coloured by choice of the producer). The combined sound of the tracks is at the bottom.

Image 12.



Mixing Screen

The song is disassembled and arranged by the producer.
Source: author

In addition to compression, equalisation and timing changes, producers also use the stereo spectrum to organise the many, potentially mutually hostile, tracks. Termed ‘panning’, tracks can be located, using different decibel combinations across a range between the right and left speakers. In this way different tracks can be separated by when, whether and where they appear on a scale between right and left (Jeremy Hope: composer). In another visualisation of sound, Ian Wood described the range of choices as like organising a 3D jigsaw puzzle. The vertical axis is frequency, stereo panning is left and right and volume is near and far. It is by utilising this territory that a large number of tracks can be organised to create the final sound of the song.

This is where the significance of Alan Scholes' use of slightly out of tune vocals can be seen. Two tracks of exactly the same performance would simply add together and be louder whereas if they were slightly different pitch, then the effect is to increase the density of frequencies and make a 'bigger' sound (James Daniels: producer; Ian Wood: producer). In the same way recordings of instruments or voice can have different effects put on them and then be placed at different points in the stereo spectrum to create a choral effect. Jeremy Hope, recalled a production involving a successful girl group, where they had lots of copies of the singers' vocal tracks:

> *"So if you pan it hard left and hard right and then in a bit, in a bit, in a bit, you end up with this wonderful choral feeling to it."*

5.2.2 Constructing sound

It is clear from these accounts that the outcome of the mixing process is an overall sound that is very different from that obtained by simply adding/subtracting the recorded tracks. This is important for two reasons. One, that producers, not artists are thus associated with the creation of sound, and two, that different producers can create very different versions of the same recorded tracks (artists Paul Macleod and Roger Scope). This latter point is especially important when record companies are considering the submittal of the mix at the end of the recording project, something that will be discussed in the following chapter.

If we recall the analysis in Chapter 3, which covered pre-production meetings where artists and producers discussed the kind of sound the artists felt would be suitable for their music, we can now begin to see how this has been realised. The sound aimed at by the artists is achieved by the producers' organisation of the recorded performances of the artists (Chapter 4), and the producers' subsequent representation of the sound of these recorded tracks which, based on particular qualities (accuracy, separateness), required their intervention. There are additional qualities with associated systems of calculation and these will be introduced further on in the analysis. But at this point we can return to a distinction identified earlier, between the music and sound of the artists and the sound of the final recorded song. The artists' sound is a singular one,

delivered during isolated multitrack recording sessions to the mixing desk of the producers. The sound of the song achieved by the action of the producer is however, a collective one involving all the separate performances of the artists as well as tracks created and manipulated by themselves. It is this control over the collective sound of the mix that separates the artists from the song and allows producers to be associated with the sound of the artist:

> *"You know, like you'd go to Mark Ronson for that sound or you'd go to Timberland for that sound or if you're making a really organic, earthy record, you might go to Ethan Johns who did like Kings of Leon... He's got a very recognisable kind of sound."* (Ian Wood: producer)
>
> *"To this day, I've been accredited with giving Sonique her sound."* (William Wallby: producer)

Lead singer Ned Gold describing a recent experience with a producer, illustrates these themes of control, manipulation and the conferment of a sound to an artist:

> *"He has beefed it up and made it sound like he has got our sound and he has made the two tracks, although they are completely different songs, they have an identity, a similar identity in the way that they sound. That kind of big, not epic but full on sound that you want to hear...a Rock track."*

In this quote, the 'beefing up' is a reference to the creation of a bigger sound through layering, sound effects and panning, and the comment 'having our sound' is pointing to the translation of their music and performance into the desired collective sound. This is the delivery on the promise made during the pre-production meeting when musical references and genre classifications were used in the selection of the producer. Important here is the view that now the band has an identity that it didn't have before. A sound that will enable people to recognise their music regardless of the song itself. While the songs will vary, their sound can remain fixed in a particular sonic form. Gold, for example, is placing importance on the difference between a big sound and an epic sound. Between such sound based distinctions, genre formats are constructed and demarcated, as Martin Kato explains:

> *"...depending on the type of music has sonic stipulations as well. If you do dance music the drums have to be very loud. Mixing has to take that into consideration. In a Rock band you have certain criteria might be the vocals have to drive the whole thing or it might be the guitars. Different genres have different styles. Different expectations."*

The use of sound based identifiers also included references to particular ways of mixing drums (Ian Wood), and determinations of the number of beats per minute (Ned Gold). Simeon and Sonia described looking for the right bpm to make listener's shoulders move and thus make it 'poppy' and good for radio broadcast. While engineer and producer, Steve Toynbee, described the decisions regarding guitars and genre conventions:

> *"Like say if you do dub, you want it to be very big boom with lots of bottom end and no top end bass sound, whereas if you're doing something like really heavy metal, the guitars are going to be so big that your bass needs to be quite clicky or, you know. So it kind of depends what music you're doing and it's also down to how you produce and how the artists want it to sound, so you just change it accordingly."*

This gifting of sound doesn't always accord with the artists' wishes (Sally Johns: producer manager). The producer's control over sound can make *"a band sound like another one even if they are playing something completely different"* (Ned Gold: artist). This control can be exercised in various ways. In extreme cases as with artist and producer Dan Shepherd's experience of how sound qualities can be imposed on the artists:

> *"Oh well, you're an Indy band," so they would go and listen to that week's crop of top Melody Maker [music magazine folded into NME in 2000] bands like Lush or Ride and that's who you'd sound like at the end of the session whether you wanted to or not, do you know what I mean?"*

In other cases, producers spoke of trying to balance the requests of the record company to make a commercially suitable sound (one that matched current sound characteristics) and the need of the artists to feel they are participating (e.g. Keith Nemo). Ian Wood described this skill in the following terms:

> *"Obviously if you try and make it really blatantly Pop and not the direction the band wants to go in, then they'll resist that. So it's a question of bringing in some of their personality and yet delivering to the label what they need."*

The selection of a sound based identity for the artists can, as during the pre-production meetings, be arrived at by using references from other recordings, as was done during my visit to the mixing session at Studio J. Comparisons between the sound under construction and the aimed for recorded sound of a successful song, can be carried out using spectrum analysers in the mixing desk, that can read and visually represent the frequency ranges and stereo spread

within the track. This is the A/B comparison described by studio manager and producer, Tim Simons:

> *"Then we say bring in tracks of an artist you are listening to at the moment or someone who has inspired you and we will aim for that. We can A/B that track sonically in the mix and when it comes to the main EQs in the mix bus [final mix decisions], certain styles of music there are certain rules, about the bass or the kick through, we will EQ snares at certain frequencies."*

Use of recorded music to provide references for mixing decisions was extensive and particular. Artists brought CDs containing desired sounds into the mixing session:

> *"We bring in CDs of the bands that we like or guitar sounds that we like and say 'Make it sound like this'."* (Derick Lawson)
>
> *"We had CDs of things that we wanted sounds within those CDs we wanted things to sound like that. We wanted it to be the same."* (Simeon and Sonia)
>
> *"I mean any time I turn up at a mix, I would always bring CDs, you know, but it's generally speaking for the one sound for this one song that I'm looking for that's maybe spread across 4 CDs. Do you know what I mean? You go on 'Okay, listen to the guitar sound. Forget the rest of it. Listen to the guitar sound. Listen to the vocal sound on this. Listen to the snare sound on this sound'."* (Roger Scope)

Using such references, the desired sounds were identified and described. For example, *"I want the drums to sound like Steely Dan"* (Pat Stills), or *"I need a bit more Elvis on the voice"* (Roger Scope). References can be used for overall sounds (Nigel Harris: producer), particular instrumental sounds (Paul Macleod: artist), or for particular elements within a song. For example, producer and artist William Wallby, described how a reference to a chorus within a song was used to determine the desired sound effect:

> *"...this particular song, everybody - myself, the record company, the band - we were all kind of like 'What do we do with this one? You know, we can't do this and that sounds terrible,' and then there was a moment. Somebody did mention a reference, although… It was Hallelujah chorus. [...] So somebody mentioned that and then a couple of people went 'Yeah, yeah, that'd be great'."*

The use of references, born of a difficulty of describing sound, contributes to the preservation of genre classifications and the waves of similar sounding artists identified by producers as coming from A&R requests to reproduce currently successful sounds (e.g. Jim Thomas). Reading these accounts we can see how sound is important to the construction of product categories (genres)

that organise the consumption of musical product. That sound characteristics created by the producer inscribe the song with identifiable qualities that can be compared and evaluated by consumers and thus reduce some of the uncertainty surrounding the value of the released product. Cliff Target, a German producer and studio owner, while fluent in English, retains some idiosyncratic vocabulary. He used a revealing phrase to describe this reference-based commonality of sound. After describing how productions in his studio often involved the reproduction of successful sound in similar terms to producer Anton Sprake, Cliff characterised the organisation of recording projects as one of *"mass compatibility"*.

5.3 Making it 'real'

"Making records is kind of an illusion, do you know what I mean?" (Ian Wood: producer)

In addition to the organisation of frequencies and stereo positionings to construct a sound where all the instruments can be heard and don't interfere with each other in an unplanned way, a further important sound quality was present in producer accounts of the mixing process. This was to construct the *"illusion"* that the song is a recording of a performance, the capture of the artists playing together (Ian Wood). Producers accordingly considered their decisions and sound manipulations through the notion of 'reality'. How real, or in other words how close to the sound of live performance did the mixing decisions make the song sound?

5.3.1 Constructing a 'real' performance

Recalling a project in which he co-produced a song with a very successful artist, Charles Church described a decision he took regarding the treatment placed on the artist's guitar performance that is relevant to this matter. As identified in Chapter 4, the recording process is carried out to ensure maximum manipulability during the mix stage. The use of DI recording, where the

instrument sends the signal straight into a mixing desk rather than into an amplifier out into the room and then picked up by the microphone and sent to the desk, is part of this approach. The audio signal is clean, and by not carrying other sound sources such as reflections from the room or spill form other instruments can be more easily adjusted in terms of timing and the characteristics of the sound envelopes of each note. After Charles had recorded the guitar performance in this way he decided that by using a simulated amplifier, a software version of the physical amp, he could add some of the sound features associated with a 'real' recording of the guitar:

> *"A little bit of speaker rattle or a tiny bit of distortion and to me it just gives a bit more reality to the sound."*

By recording in a separated, unaltered way, sound qualities associated with reality can thus be added in a controlled manner. The sounds of performance, such as speaker rattle and distortion can be calibrated and adjusted to suit the rest of the tracks. Were the speaker rattle and distortion to be part of the original audio signal, these sounds could not be removed and would respond to editing and sound effect changes, thus restricting the ability of the producer to mix the tracks together. A good example of this approach can be seen in Paul Macleod's description of a recording a track containing only feedback (the noise created by the guitar and the amplifier creating a circuit of input and output audio signals):

> *"Then the last track was just me literally putting some feedback on top of it. Just to give it a bit of white noise? Play the guitar and hold the guitar up to the speaker and as the sound of the speaker comes out it will go back into the guitar pickups and it will go round and round. I played a big chord stood as close as I could and let the feedback grow and grow and grow. It came in just before the chorus a lead-in to the chorus a high squally sort of noise."*

Feedback occurs occasionally during performance when the guitar or microphone and the amplifier cross talk if the artist moves too close to the amplifier (depending on the volume of each). By recording it separately the producer could insert this 'sound of performance' into the mix of tracks without sacrificing his ability to make editing and mix changes to the guitar recordings.

Stereo panning decisions also follow this logic, with instruments panned to similar sides of the spectrum if they belong together during the performance. Such as is the case with the bass and percussion tracks (Ian Wood: producer). Jo Berg described a mixing project he was given where the first producer had panned the instruments too far apart, and had thus lost the sense that they were playing together in an often small performance space such as on a stage. This representation of reality as a sound quality was similarly seen in the evaluation of sound effects present in a finished song. The sound of instruments were praised for their representation of reality, defined here as an absence of the traces of manipulation. For example, William Wallby described a post-mixing discussion with a record company where he drew attention to the guitar sound saying, *"the guitar feels nice and organic and real and honest"*.

Importantly, producers acknowledged that the recording project and the final song was an *"artificial"* (Jim Thomas), *"dishonest"* exercise (John Hinger). However they defended the constructed nature of the final sound as a necessary and creative exercise. Creative, because more decisions could be made on the different sound characteristics of the song. Necessary, due to variable artist performances, the interactivity of sound waves and the influence of the recording spaces. In this way appeals to creativity and necessity were employed to justify the disciplining of artists and sound waves to create a representation of a performed sound that could not occur in reality:

> *"You know, its totally artificial, it's created artificially, but it is done for creative reasons - It's to create an interesting thing."* (Keith Nemo)
>
> *"I mean the recorded medium is an artificial medium. It's not just sticking your mike in front of people."* (Jim Thomas)

The important point to note here is that the reality that is being discussed here is not a quality of performance, but one of production. It is a quality that could only be realised if artificially constructed. However the illusion is broken if the interventions of the producer to create a 'real' sound are revealed to the listener. So for example, composer Jeremy Hope recalled a discussion of a mix where the use of an editing grid and note stretching software had set the timing of the song to the exact beat for all the instruments:

> *"I said 'Look, the reason I have a problem with it is that there's only one part of it that's live,' and they went 'Well, we can't hear that' and I said 'I can and to me the machinery has made it very metronomic'."*

In response to this danger, one way of demonstrating reality was to preserve slight tuning or timing errors of the performances within the final mix. Selective preservation of errors help convince the listener that the song heard on the CD or sound file was a performance and were thus valued by the producer (as was the case with Jim Thomas's earlier revisiting of the demo recording). Producers judged when the mistake was acceptable as a demonstration of reality, or a glaring problem that required adjustment (Pat Stills). Here is William Wallby recalling a typical conversation with singers he is recording:

> *"...if they're singing a line and maybe their voice cracks or breaks and the artist's 'Oh, no! I've got to get it right. I've got to get it perfect!' for me as the listener, the colour of that break at that point of that emotion might be perfect. It might be 'I just love it! It's real. It's genuine and you can feel your emotion at your point.' So that's what I'll go with."*

The necessity of artificial renderings of performances combined with the need to preserve the illusion of the final recording as a captured performance is illustrated in Larry Jenkins and James Daniels' description of the production of Punk music. Casting the genre, in contrast to the do-it-yourself ethos that was commonly attributed to it, as being highly produced (Larry Jenkins). Here is producer James Daniels:

> *"The Sex Pistols' recordings were actually very produced, but not over-produced. They were produced not by some sort of young punk producer, but by a very musical producer, Chris Thomas, who produced Roxy Music, who completely sort of ... Well, the Sex Pistols would have been completely anti, you know, sort of Glam Rock, but he, to get what people thought of the Sex Pistols' live sound working on a recording ... Because you couldn't just have literally their live sound. They actually made very, very commercial recordings and they layered the tracks - that's what I was saying about with vocals. Multitrack, lots of rhythm and guitars and did lots of parts slightly different. So it sounded this very big, powerful track, but it didn't sound over-produced because it sounded like a representation, if you like, of their live sound, which if you had their actual live sound would have sounded very thin."*

The highly produced nature of Punk Rock artists such as the Sex Pistols and the Clash, is presented as a necessary means of creating a representation of what their live music would sound like if the interactivity of sound waves, the constructive nature of space and the performance variations of the band were not a factor.

5.3.2 Maintaining the illusion of performance

Daniels's mention of 'over-production' is associated with this objective. Over-production was described in interviews as occurring when the sound was *"too clinical"* (Sally Johns: producer manager), *"polished"* (John Hinger: producer) or *"sterile"* (Ian Wood: producer). In other words sound that carries the evidence of the interventions of the producer. The picture that is emerging is of the studio as sound laboratory, not a witness to performance as in transmission models of production, but a constructive event, involving the separation of performances, isolation of discrete sound waves, inspection, adjustment, creation and configuration of sound waves. From this perspective, it is the producer's task to hide the constructed nature of this reality, as producer and artist Dan Shepherd, defined it:

> *"...a really, really well produced record will let you forget that it's been produced completely."*

The hidden hand of the producer extends to the insertion of sounds that while not audible to the listener, provide an enabling function, bringing out the planned sounds. Accounts of the use of a 'pad', illustrate this practice. A pad is a block of sound, generated by a sampler. It is inserted into the song to support the frequencies of other tracks, or to *"keep the mood going"* (Edward Price: artist, producer). Composer Jeremy Hope, describes its use during the layering of string tracks on a record:

> *" So I thought 'I'll get the string quartet in and I'll just layer them all up' and we layered and layered and layered and the more we layered, the muddier it became and at the end of the day we used their first take and [put] a pad behind it and the sound was fantastic."*

On this occasion the problem of separation of layered tracks was resolved by using a pad of sound that cushioned the sound of the string quartet, making it appear that there were many string instruments without generating the problem of clashing frequencies obscuring the *"vibrato and dynamic movement of the instruments"* (Jeremy Hope). It is this description of the producer's role as one of making interventions in the organisation, composition and character of the sound of the recorded tracks without leaving any evidence that led producer William Wallby to propose a memorable metaphor:

> *"As you know, when you put lemon on fish, you don't taste the lemon; it brings out the flavour of the fish. Sometimes you can have some sounds that you don't hear them and you don't even know they're there, but they're enhancing."*

The description of production as an artificial process organised to enable the construction of an illusion (that the song is the result of the artists' performance), provides a way of understanding the adoption of digital recording media. Digital recording and mixing involves the conversion of electrical voltages, analogue signals, so called as they share the wave characteristics of air pressure that make sound. The electrical signal picked up by a microphone, is sampled at various points on its sine wave and transformed into digital information. Digital audio has, over the last 20 years, gradually supplanted the use of analogue tape, though some studios, such as Toe Rag in Hackney, London, differentiate themselves by retaining the use of analogue recording and production systems (Dan Shepherd: producer, artist). Interviews with producers and engineers revealed a well-established debate on the relative merits of analogue and digital recording. Some producers and engineers suggested that analogue sound was warmer, and had a specific quality missing in digitally rendered recordings (e.g. Tony Poll, John Hinger, Dan Shepherd). While others pointed to the increasing sample rates that enabled an audio definition beyond that discernible by the human ear (e.g. Steve Toynbee), and to the carrying out of comparative tests between digital and analogue recordings that revealed no difference (Charles Church).

Considering the digital/analogue switch from the practice perspective of this study, what becomes clear is that digital is associated with the objective of the producers to make interventions in the recorded performances, without somehow signalling this construction to the listener. While producers such as Ian Wood acknowledged that there are indeed cost based merits to digital audio recording, the valued quality of digital that emerged more strongly during analysis of the interviews, lay in the ability to make changes without leaving evidence that threatened the illusion of the live performance. All sound recording practices *"leave fingerprints"* (Andrew Bones: sound engineer), it is just that the analogue tape recording practice left traces that were enhanced and thus made more apparent by the producer's interventions and adjustments. This is because the magnetic tape on which the voltage readings

were captured (magnetised) contained minute variations on the coating of the tape that created fluctuations in the sound wave. These fluctuations created a hiss that could become audible during editing and production. Such as when recordings are repeatedly copied during layering, or become enhanced in volume during the application of sound effects or during the establishment of relative volume levels during mixing (Keith Nemo: producer). As producer Bill Sykes explains:

> *"With analogue recordings you could manipulate… Any manipulation that you did caused degradation in the quality because as soon as you copied something you'd… we say you'd lose a generation. You know, if you copy an analogue tape onto another analogue tape it becomes more hissy, less transient, less bright, less clear and the more you copied it, the more hissy and the loss of quality became greater..."*

Digital recording, while leaving fingerprints, such as fleeting moments of absolute silence when no audio signal was received (Dan Shepherd: producer, artist) or the abrupt 'clipping' of sound wave peaks (James Daniels: producer), is a 'linear' system meaning sound doesn't change during copying (Andrew Bones: recording engineer). As copying is a key part of editing and layering to create the illusion of performance, digital equipment enhances the producer's power:

> *"So enter digital technology which was no noise. So everyone's going 'Oh, fantastic! Great! No noise! We can bounce forever and keep doing this stuff and we can end up with a million tracks all on 24 because we can just keep bouncing and bouncing and bouncing'."* (Keith Nemo: producer)

'Bouncing' is the analogue term for moving selections of recordings to other tapes during the editing and layering tasks. So the importance of digital lies not in any introduction of additional functionality to the producer's role as suggested in technological explanations of studio practice. Editing, sound manipulation, layering, stereo panning and even pitch correction were all available and practiced by producers during analogue recording projects. As producer John Hinger commented, *"I just see the computer as a different type of tape recorder really"*. The key point here is that digital aids the producer in the concealment of the artificial and constructed nature of music production, allowing the song to be a representation of a live performance.

5.4 Speaking for sound: producer decisions and listener experiences

Decisions traced in the creation of musical product have thus far involved the producer's construction of sound qualities, (accuracy, separateness and reality) to enrol artists in practices that perform the producer's agency. However this agency is not unrivalled, and as we saw during the discussion of the visualisation of sound during the section on editing, artists and A&R representatives have views over the decisions about sound taken by the producer. The mixing and sound manipulation process discussed in the sections on mixing and reality are similarly an opportunity for artists and record labels to become involved in the decisions to do with the desired sound qualities of the song. Contributions from the artists and the record labels were not necessarily described during the interviews of producers as unwelcome. All parties needed to be happy with the final product, and to do this artists and A&R representatives periodically attend the mix sessions, as well as rough mixes, or work in progress being sent to record companies (Joan Smith: studio manager).

Despite acknowledging the necessity of artist and A&R involvement in decisions over sound, producers offered a number of features to do with sound and the mixing process that suggested that their participation was regarded as more effective if it were restricted. One, that the views on the mix were often competitive; within bands over the relative volume of their instruments (Tim Simons: studio manager, producer), as well as between the record labels and the artists (William Wallby: producer). Secondly, that judgements on the sound of a song during construction were of limited value as the mix hadn't been completed and the production needed to be judged as a whole (Robyn Fitz: producer manager), or in other words, once the producer had finished. And finally, connected to the difficulty of judging a mix in progress, the need to consider how the song will sound on different media (MP3/CD) and when broadcast on the radio. We will consider these issues and analyse the degree of control they afford the producer in the following two sections that will conclude this chapter.

5.4.1 Preserving producer decisions over sound

One way producers restricted the interventions of others is linked to the difficulty, previously identified, of translating descriptions of sound. The use of metaphors identified in Chapter 3 such as bright, gritty, dull or blue can indicate a sonic style but are not very precise definitions and are, unlike grid editing lines, highly subjective (Dennis Hinton: producer, studio manager; Nigel Harris: producer). Translating the artist's use of such terms when describing the sound qualities they would like on their music was described as a key part of the producer's task (Eric Efford: engineer, producer). Indeed, as we saw in Chapter 3, it was the producer's ability to demonstrate how well they understood the descriptions and references to sound qualities used by artists during pre-production meetings that established their suitability for the recording project. The importance of translating artist's sound metaphors and the previously suggested reliance on producers for the sound desired by the artists, is evident in their descriptions, such as the wish of Ned Gold to sound 'big' not 'epic' or that of Derick Lawson, when he said:

> *"I don't want to be in a band that sounds really heavy I like being in a band that sounds hard."*

This translation of language into sound wave characteristics represents an opportunity for the producer to guard their systems of calculation and ensure artist and A&R contributions are of a level they deem appropriate. For as well as a facility for understanding the sound descriptions of artists, producers and engineers possess a vocabulary that can be easily shared between each other and with the equipment they were using. Fluency in this language excludes artists and A&R representatives of record labels from knowledgeable participation in the decision-making involved on sound production. Producers for example described knowing that *"warm is around 300 hertz"* (Eric Efford) or *"bright was up to 4 kHz"* (Tim Simons). This ability to translate linguistic descriptions into sound variables enables producers to reinforce their control over the sound qualities of the eventual song. This interpretation is supported by William Wallby's account of an occasion when he and the engineer were using frequencies to describe sound while an A&R representative was in the studio:

> *"I've had a record company guy saying, 'I've no idea what you two are talking about. It is just like you are talking in code'."*

A&R representatives, not generally in possession of the 'codebook' were thus limited to poetic references that were easily rebuffed, or which, by virtue of their vague nature, were unlikely to result in the planned change. Producer Dan Shepherd provided an example of this, a request from an A&R representative during a recording project he was working on:

> *"Can you make that guitar more kind of windy in the middle of the day kind of thing?"*

The forensic listening that characterises the mixing process was also identified by producers as working against the presence of artists and record managers, at least their constant presence in the control room. Making adjustments and then checking to hear what impact the change had on the other tracks is a time consuming task, involving intense and repeated analysis of sections of recordings, single tracks and combined tracks:

> *"I have to play maybe 2 seconds over and over again just to make the sounds right and it takes forever. It takes a lot of patience doing this."* (Jo Berg: producer)

This process can be difficult to endure, and producers recommended the artists give them a day to work on the mix before coming back to discuss the work, *"otherwise it is frustrating and you don't end up with anything that is any good."* (Harry Stammer: engineer, producer).

> *"I normally say 'Okay, give me 5 hours / give me 6 hours' or "Let me call you when I think it's at a good place. You know, once I've got there, we can change whatever you want, I don't care, but let me get to where'... you know, let me do my work first."* (Harry Stammer)
>
> *"Sometimes you need time alone to show them why I needed to make these changes to the song. Because they are complaining with every change I make and then you say come back on Monday and then when I play it they are often very happy with the changes."* (Jo Berg)

To support the need to guard against the "artistic" involvement of non-producers, producers also spoke of the danger of getting lost in the many tracks and the possibilities for change and thereby losing sense of the overall sound (e.g. Ian Wood). Jim Thomas suggested that the ability to work at a micro level without losing sense of the macro, finished sound, was a result of experience as a producer, and one that enabled him to hear the song in the same way as the eventual listener:

> *"It's the overall feel of the track as a whole, you know, and you've got to never forget about that. Listen to the music and not so much to the parts of it. That's really something I had to learn - not listen to the parts of it, but listen to the whole vibe of it, the feel of the whole thing, you know, because that's what it's about. People that are music listeners, like Pop fans - which is, I guess, the music I work in - they listen to it as a whole. They don't go 'Oh, I don't like that record because that high hat's a bit wrong, you know.' They just listen to the whole thing. 'Does that make me feel good or not? Can I relate to this envelope of sound or not?' and things like high hat really don't matter that much ultimately, you know."*

Hearing the song from the point of view of the listener and therefore claiming to speak for the listener, is an important feature of decision making in the recording project and in particular the mixing stage. In a reasoning that appears to support the decision-making ability of the producer, interviewees spoke of the importance of resting their ears and breaking up the mixing process:

> *"After a couple of hours your perspective changes you are not as able to make judgements on mixing at the end of the day as you would at the beginning. Because your ears are tired your frequency response actually changes. So you hear bass, high frequency and middle frequency completely differently. Because if you think about it mechanically our ears are like little hammers, muscles, after all day the muscles slow down a bit like any other muscle and your mind is tired you might hear different bass because you are focussing on it more."* (Edward Price: studio manager, producer)

Though 12 hour or more mixing stints continue to occur in commercial studios (Dennis Hinton: studio manager, producer), these were described as problematic as judgements changed depending on how much music had been listened to:

> *"Well of course your ears do get tired when you're sitting in the studio listening to the same thing all the time and you lose your perspective. If you're wise, you stop and you have breaks and you come back to it and you also… I definitely let go of things. You know, there are points when I kind of ignore what I'm hearing because I know that it's not quite right."* (Harry Stammer: engineer, producer)

The belief that long mixing sessions degrade decision making abilities, added to the quick recall facility of digital mixing software, and the difficulty of judging a song during the mixing process, are all consistent with the producer carrying out the mixing in a private production room or project studio. *"I have brought Nashville back here"* said William Wallby, pointing to the tracks from a recent recording project, now sitting on his mixing desk. This transfer of the recording project to the more private space of the producer's home studio has the effect of distancing the artists and A&R representatives from the project and of also enabling a method of working that further militated against artist or A&R representative involvement. Away from the

public space of the commercial studio, producers described making mixing decisions in shorter bursts over longer periods (e.g. Jim Thomas and Charles Church), though tales of 14-hour days mixing were still relayed by project studio owners (Tony Poll). The justification for breaking up the mixing process and thus creating a number of opportunities to re-listen to the mix, was that it enabled producers to refresh their ears (Pat Stills: engineer, producer) and thus counter the variability of judgement caused by long periods of listening. As composer Jeremy Hope described:

> *"You do a great bit of work in a day and you're all fired up and you go home and you can't get it out of your head and you're really excited and you've done something new and you come in the following morning and you set it all up and you press play and you just think 'How disappointing. That wasn't what I thought it was.' That happens."*

Because vocals often have to be done again once the instrumental mix has been finalised, *"I don't want to hang the pictures until I have decorated the room"* (William Wallby: producer), these project rooms often included overdub booths, acoustically 'dead' spaces for recording single instruments or voices.

Image 13.

Keith Nemo's Project Studio

The recording booth is at the back of the room with a glass window. The lilac boards on the wall are sound absorption panels.
Source: author

Ownership of such a room, something one engineer and producer described as almost expected as part of being a producer (Eric Efford), enables the producer, as project manager of the

recording project and able to select the recording and mixing spaces used, to compete with recording studios and commercial production rooms (Henry Dane: studio manager).

Though project rooms are often treated to reduce sound reflections, and producers using digital mixing equipment maintained that the sound qualities (inspection, manipulation) achieved in these spaces are comparable to commercial studios (e.g. Jim Thomas and Charles Church), the control of sound in these rooms with their often parallel walls, is necessarily more variable. This leads producers to book a short time in a commercial studio in order to check whether the mix in their production room has not under or overemphasised particular frequencies, and unbalanced the mix (Tim Simons). Studio owner Henry Dane expressed frustration at this use of the commercial studio, though he accepted such requests, as sometimes the quick check resulted in longer, though not as long as if the entire mix was carried out in the studio, use of his studio:

> *"They've gone 'It's great but, you know, I really need to go somewhere to listen to it.' And I get people who just hire a studio for half a day and come and listen to what they've done because they know the room. I don't go 'Well you've got your own studio now. Fuck off.' I go 'Yeah,' or 'Just come and have a listen. Oh yeah, okay. I think I can make it sound better. Can I have a day to mix it?' and they'll do a re… not a re-mix, but then they'll mix it again. And as there's more and more of that… You can do a hell of a lot in the box in your home studio or whatever, but certain projects need a little bit more treatment and a little bit more precise listening at the end."*

The use of project studios is thus linked with a desire for control over the mixing process, the perceived need to improve the effectiveness of the producer's ears by enabling frequent rests (without knowing the studio clock was running) and the advantages of reducing recording costs and thus making their selection for a recording project more attractive to the recording company. However while we saw in Chapter 3 how dry rooms and DI miking allowed producers to use project or home studios to record sound, these rooms did not reproduce the sound waves of the song as reliably as commercial studios and thus reduced the ability of producers to make intricate volume and panning decisions necessary during the mixing process. This requirement to hear sound as it moves around a room recovers some of the value of commercial studios. This brings us to another occasion where the representation of sound, this time through the speakers that reproduce the sound and the features of the space within which it is heard, are enrolled by

the producer to both discipline others and enable them to evaluate and manipulate the product qualities of the song.

5.4.2 Representation and monitoring: speakers and decision making

Producers, in order to prepare the song for listening, described the importance of considering the different spaces and media through which the song will eventually be heard:

> *"When I listened to it on my laptop I thought this morning 'I think that song's finished,' but when I listened to it in the car loud, I thought 'There's a long way to go'."* (Charles Church)

Mixing has so far been described as the organisation of sound to avoid competing sound waves and to construct an illusion of performance. A further decision frame by which the mix of sound waves is analysed by the producer involves the preservation of these mix decisions during the playing of the song through different speakers and in different sound spaces. This is important as producers' control over sound, so effective in organising artists' performance during recording, framing their decision making power during editing and supporting their power over the 'reality' of the mixed sound, is threatened once the song leaves the studio. This is because audio equipment differs in its ability to reproduce the sound waves constructed in the studio. To preserve the producer's discretionary power over the recording process, the integrity of the producer's work needs to be maintained during playback on the radio, in MP3 files on a computer or iPod, in the car or the club, and in the home on hi-fi equipment.

Because MP3 files reproduce sound at lower resolutions than CDs, they have the potential to alter the sound characteristics of the song designed by the producer (Charles Church: engineer, producer). We can see this in Ian Wood's example of a conversation with an A&R representative on the sound of some drums in a song he had just completed:

> *"You know, if they're commenting on 'Well, the drums aren't very punchy,' you go 'Yeah, but it's an MP3.' If you're comparing it to a CD, then that's what using MP3 does - it makes things a bit grainier and more distorted."*

Artist Paul Macleod also described a change to the studio version heard when listening to work he had placed on the Internet:

> *"I put it up on my space and listened to it and the vocals were right down in the mix. I thought what has happened? The vocals have disappeared. [When] I listened to it back on the software I saw that the vocals were still up. That's the thing when you upload onto sites like MySpace and Bebo are singer says they cut everything, compress it to the smallest possible file and the vocals are the first thing to go."*

Radio broadcasted songs also challenge the decisions of the producer due to the involvement of two physical variables, the quality of the radio's speakers through which the song is heard and the listening environment in which the song is played. Due to their small size, average radio speaker quality is often quite low, reducing the representation of the full range of frequencies mixed in the studio. Additionally listening spaces such as cars and offices are often noisy, making quieter parts of songs difficult to hear. To combat this, songs broadcast on the radio are highly compressed, thus reducing the dynamic range of the song and increasing the average volume level (Martin Kato: artist producer). BBC sound engineer Andrew Bones described how levels of compression varied according to the type of the music, and the time of day it was being played. Radio 1 for example received the most compression, while Radio 2 had many different levels to respond to the mix of talk and music. Radio 3 had the least amount of compression so as not to degrade the dynamic variations of classical music, and none at night when listeners were expected to be in quieter locations.

As well as noise levels of the spaces in which people listen to songs encouraging the adjustment of mix levels, the design of the space in which the song is reproduced also alters the perceived mix of sound frequencies. Large spaces designed for dancing and drinking may contain materials and structures such as pillars that interfere with the performance of sound and can lead to the loss of particular frequencies. For example, Tim Simons, whose studio mixes a lot of Club music, described how sometimes particular bass frequencies when played in the club would just *"disappear"*.

Producers prepare their productions for these challenges by playing their mix through different kinds of speakers, or monitors, to represent these different sound environments and assess the stability of their decisions. Recording studios have four basic types of monitor. Large wall mounted monitors, smaller, desk mounted near-field speakers and two 'reference' speakers, one mid-range audio quality and one poor. These are different representations of the audio worlds of the listener, and afford producers different analytical and decision making capabilities. As Jo Berg describes:

> *"You must look at your speakers as your best friends. You must know them. You must tell them your secrets and they have to tell you theirs. So you really need to get to know your speakers as they are your tools to the world."*

The large speakers deliver a loud powerful sound and are unsuitable for mixing or at least continuous listening during mixing. This is because of an attribute of volume named the Fletcher-Munson curve, where the ear's sensitivity to loudness differs according to the frequency of the sound wave. Making mixing decisions on loud music thus overemphasises different frequencies and downplays others. Here is studio manager and producer Cliff Target, describing the relationship:

> *"So the louder you listen to something, the more you hear the very low end and the very high end and the quieter of course it's the opposite. Meaning that if you listen to something that has a lot of bass frequency and a lot of high frequency, it's very likely that they don't listen to it very loud on a big speaker system - and the other way round, if you only work on big systems, you will find that it sounds dull and difficult on smaller systems."*

The large speakers are accordingly, used sparingly. For example the big speakers at Studio J were rarely used during the mixing session I attended. When Alan did use them the sound was impressive and looking back may indeed have performed a moral boosting role on the artists. Cliff Target described their use in such terms as *"more a kind of thing where you can impress people"*. Producer Nigel Harris was equally dismissive of their contribution. Describing an occasion when an A&R representative asked for the song to be played through them:

> *"And you are like why? Who at home has got ten thousand pound speakers and is going to listen to it at that volume? Not going to happen. They are going to have speakers like that (indicates a small size) or they are going to listen to it on the iPod or in the car. So why don't we go and listen to it in the car because that is the best way. Most people listen to music in the car or in the kitchen. Nobody sits at home...I don't know anyone."*

So the use of large studio monitors are associated with the maintenance of producer discretion by using them to convince artists and A&R representatives of the value of the producer's work, thus giving them the time needed to continue making more intricate mixing decisions. These decisions are made on the near-field speakers, which produce a flat frequency response where the full range of sound frequencies are equally represented. In this way the precise effect of changes on the track and on the mix of tracks can be inspected and judged. These are quite small speakers mounted on the mixing desk and are designed to be listened to from a short distance, the producer's chair. While useful for analysing sound waves, these monitors do not however match the audio systems that listeners will use. If the mix decisions were left with those made using the near-field monitors, the song the listener would hear would not be the intended one of the producer's design (Jo Berg: producer). In order to hear what the listeners will hear when replaying the song at home, what are termed reference speakers, are used. These represent the mid range of audio reproduction available to listeners, a set of speakers described as 'good' and 'reasonable'. In all the commercial and project studios I visited these were of one particular make, the Yamaha NS10's, with a distinctive white speaker cone.

To represent the experience of listening to the radio, a further type of speaker was used. These vary, according to the producers, but they are all small and were frequently referred to, by artists and producers, as *"the crappy speakers"* (e.g. Jo Berg, Derick Lawson and Nigel Harris) or other similar terms. By using reference speakers and poor quality 'radio' speakers, producers adjusted the mix of tracks, volumes, panning and sound effects. In this way they sought to ensure that in the radio version or via MP3 files, key elements of the sound were not lost or overemphasised during the changes to the sound brought by the reduced sound information of an MP3 file or the poor quality reproduction of sound through the small speakers of a radio (Pat Stills: engineer, producer). Using these representations the outside world is brought into the studio and producers can adjust the sound of the song, to stabilise it during its use. This stabilisation is evident in the response artist Paul Macleod got when he queried the use of multiple speakers:

> *"He had a pair of regular shitty hi-fi speakers and another pair of top end high quality speakers, then he had two speakers the size of a palm, really cheap nasty monitors. And I said why do you have so many and he said, "because we want to get the sound sounding*

really good on each pair of speakers."

Image 14.

Keith Nemo's Mixing Desk

Note the different speakers arranged behind the desk. The small brown ones are the crappy speakers.
Source: author

Eric Efford, who produces recordings of live concerts, continued this logic of representation during mixing decisions, when he described putting the *"audio feed into the TV so I can hear what it sounds like coming out of the TV"*.

In Chapter 3 the phrase 'fix it in the mix' was used to describe the actions taken by the producer to adjust and correct performance errors identified during multitrack recording. Fixing it in the mix is part of what we have seen to be a framing of producer agency, a transfer of power from the artist to the producer. After this Chapter we can see that the fixing referred to is not just restricted to modification in the sound of recorded tracks but also applies to the fixing of a sound style to the artists as well as to the song, and to a fixing or stabilising of these sound qualities so that the song may travel relatively unchanged through a variety of listening environments and media. The fixing or stabilising of the product qualities during broadcast and later, live performance will continue to be discussed in the following chapter.

Conclusion

This chapter has reconceptualised the editing and mixing of the recorded tracks as a set of practices and qualities constructed and performed to produce a representation of something that didn't occur, the performance of the artists. The regime of calculation has shifted from the isolation and capture of a 'clean' sound we identified as ordering the recording practices, to one of the construction of an 'authentic sounding' (or what various protagonists would imagine that such a performance might sound like) performance during the editing and mixing stage. Recorded music is thus the production of simulacra. Music product is a copy of something that never existed. Importantly the illusion of music product, the song, being a capture of the performance of the artists is dependent on the success of the producer in concealing the artificiality of this achievement of reality. Furthermore, the variety of listening practices through which the song is judged requires that the producer use representations of the outside world, beyond the studio, and make compromises to help configure the song in such a way as to preserve or fix this achievement and stabilise the song no matter what media it is heard through.

Although the producer's task is now more or less finished, the song's journey is not yet complete. The producer may have defended his decision making control using location (project studio), appeals to speak for the end listener, and the highly interconnected nature of sound waves that may produce unanticipated effects from single track changes, but the song now passes to the record company, before being released to the market. It is at this point that the song is subjected to further systems of calculation, enabling the struggle for authorship by the record company, the funding agent in the recording project, to be rejoined. In the following chapter we will analyse what happens when the song passes to the record company, moves to the mastering stage before being manufactured, distributed and finally performed by the artists during the promotional tour to support its sale.

Chapter 6

Post-production: Reversibility, compatibility and reproduction

Introduction

Thus far, tracing the practices followed in the creation of musical product has revealed how sound qualities such as clean, accurate, separate, and authentic are enrolled by producers to align artists and A&R representatives into behaviours and frames of reference that perform their agency. We have identified that the record project is an exercise in stabilisation, of fixing the sound qualities of the song to produce a musical product. My argument has been that these insights have been obscured by the transmission model of cultural production that treated the product as an unproblematic entity, and the processes of product creation as one of transfer from the artist to the market involving the unknowable operation of individual talent. This chapter considers post-production practices, where the producer's ability to act at a distance and preserve the decisions they made and therefore fix the qualities of the product, is tested. Four aspects of this moment in the development of the musical product will be analysed, the hand-over of the final mix to the record company and the debates that follow, the use of mixing engineers, the mastering process and finally the live performance of the song.

Once the producer has completed mixing the song, a stereo file is created (the mixdown) and sent to the record company. The objective of the mixdown is to prepare the song for mastering. However before the song is sent for mastering, the record company representatives, now in possession of the final mix, are able to evaluate the actions of the producer, and if necessary, become involved in changing some of the decisions taken during the recording project. This is

therefore a point where the completeness of the production of the song is contested. Important in this exchange of views over whether the song is 'finished' is the reversibility of digitised sound and the contents of the musical files that are sent by the producer. A further interruption in the transfer of the final mix of the producer to the mastering studio lies in the use of what are termed mixing engineers. New to the project and directly hired by the record company these individuals represent a further challenge to the decisions of the producer.

The mastering engineer's task is to produce a master copy of the stereo recording suitable for broadcast on the radio and distribution to retail websites and manufacturing plants. Though mastering as a role is arguably defined in relation to the producer, another case of the alignment of interests to support the power of the producer, the introduction of a new sound quality that of volume, threatens the integrity of the decisions made by the producer. Volume and the relationally constructed systems of calculation that accompany it enable A&R representatives to assert their views over the final quality of the song and potentially challenge the decisions of the producer. Additionally, volume as with other sound qualities identified in this analysis is a further example of how production and consumption are not worlds to be bridged as in transmission model, but are mutually constructed through the qualities of the product.

This chapter on post-production thus refers to the final movements of the recorded song as it is readied for its release into the market, via broadcast media and mass distribution of sound carriers (CD/MP3 file). However it is important that we recognise that the song as an object (file/CD) does not travel into market on its own. To accompany its release, the artists carry out a promotional tour performing the song(s) to live audiences in television studios and concert halls. This link between the performed song and the recorded version is crucial, as examination of live performance practices will illustrate how the decisions over sound reached during production are preserved, how the artists are enrolled in the promotion of those qualities and thus how the musical product, the song, is stabilised and made suitable for market.

6.1 Judging the producer's mix: recalls and stems

> *"The weakness is of course, I think, that you can change anything all the time."* (Anton Sprake: producer)

Once the producer decides the mix is ready, he creates a mixdown, a stereo file of the song and sends it to the record company. Two things are of interest here: the discussion over the quality of the final mix, and the nature and type of files transferred to the record company. Away from the recording studio, a place where the producer controls sound, and no longer subject to appeals that the mix isn't finished, the A&R representative can listen to the mix in their own space and make judgements on the song. This can result in a struggle for authorship involving requests to change the change sound qualities decided on by the producer. A contest involving competition between different systems of calculation, the reversibility of the music once it is transferred to the A&R representative and the contractual power of the record company, based on the stipulation that the final song is of the required standard. I will discuss the use of legal orders and the way disputes are resolved later on in this section and during analysis of the involvement of mixing engineers in the section that follows as they are connected. Before I do, we need to consider the reasons behind the discussions as this involves considering the relational act of listening and the use of volume as a sound quality. An understanding of the disputes is also connected to the contents and nature of the files that are sent to the record company, the stem files, and these will need to be introduced during the discussion.

6.1.1 Recalls: the struggle recommenced

A number of explanations were offered for this additional point of calculation and judgement. One reason for the requests from A&R people to make changes to the mix was that the product, as a piece of art, is never finished (Ian Wood: producer). The variables, as discussed previously, are numerous and without accepted quantitative qualities by which to measure the work, there is little to limit additional changes; it's like *"an itch they have to keep scratching"* described record label manager, Jonathan Coe. There is little to restrain this itch, for unlike with analogue

recording projects, digital sessions can be recalled very quickly and adjustments made using the producer's project studio equipment without having to book more time in the commercial studio (Tony Poll: producer; William Wallby: producer). With analogue recording all the settings and connections between different tracks on the desk and the outboard equipment would have to be physically re-established. Something that would require time as well as the producer's notes on all the settings and connected equipment. Producers, for that purpose, often took pictures of their patch bay for future reference.

Image 15.

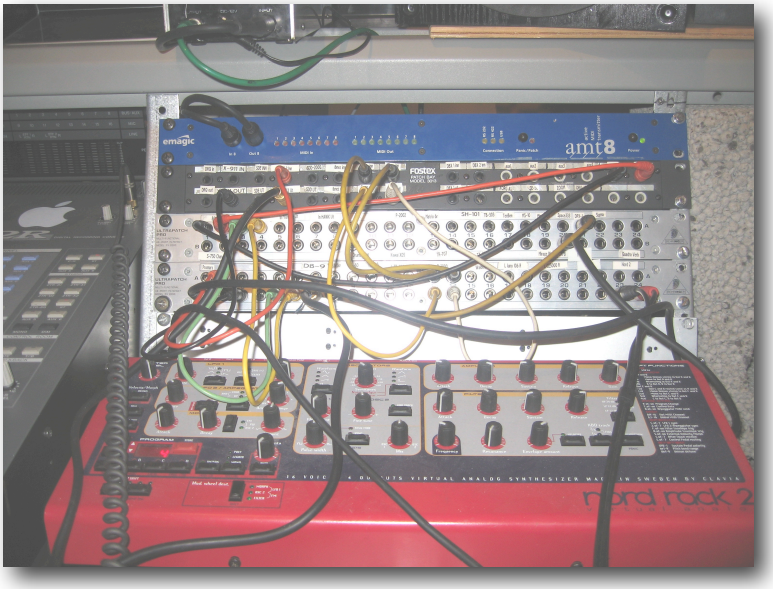


Photo to enable recall: Jo Berg's Patch Bay

Source: author

As well as tying the project to a particular studio and producer, the recalls, if carried out in commercial studios (whether or not using digital equipment) were costly. As Harry Stammer recalls:

> *"I used to do mixes. So you'd spend 2 days on a mix. They'd say 'It's great, but we want you to recall it and just turn the bass up.' So you'd go back and you'd book another day's studio time. I mean talk about budgets. You'd spend another £1,000 or the record company would spend… you know, if you were in Olympic it could be £1,000 a day and in those days I'd be £400 or £500 a day. You know, it would probably cost them two grand just to turn the bass up a little bit."*

Compare this account to Pat Stills' description of currently typical exchanges between himself and A&R representatives:

"'Right, the vocal's just a bit loud and the high hat's a bit quiet.' And you go 'Is that all?' and they go 'Yeah,' and within five minutes, bang, it's done."

With project studios such changes can be quick. However such requests to alter the mix of volumes of the different tracks such as the vocals, guitars, or elements of the percussion, were not always carried out without complaint. Producers, as with in-studio discussions on mixes discussed in Chapter 5, appealed to the interconnected nature of the mix that meant that one change may have an unwanted effect on the other parts of the song. Describing A&R wishes to turn up vocals, a common request according to Eric Efford, producer Nigel Harris protested that:

"...it's not just a case of turning the vocals up if you turn the vocals up you turn everything else down. The whole balance is affected...you know?"

As mentioned earlier, we will come to how the A&R representative can overcome the refusal of a producer to make a desired change when we consider, further into the analysis, the contents of the song files exchanged at the end of the contract and the role of mixing engineers.

Another explanation for A&R representatives going against what the producer regards as a finished piece of work - *"This is great don't touch it!"* (Ian Wood) and requesting changes - may be the desire to assert authorship over, and involvement in, the decisions of a recording project that, so far, have been policed by the producer's enrolment of sound and space. Nigel Harris is certain:

"Ultimately people can't leave things alone. Be it the band, the guy pretending to be the manager, the guy pretending to be the label. They can't leave it alone. They have to feel like they have done something to it to go 'I made that record.'"

While Ian Wood is more circumspect:

"I think it's also that partly they need to feel involved in the making of the record. Often times I find myself changing stuff a lot when actually all they want is a very subtle change and I don't know whether that's because, like I say, they want to feel involved or whether their hearing is just different from mine so actually want quite a subtle change."

This struggle for ownership following the transfer of the producer's mix was frequently described in terms of who has the 'ears' (Joan Smith: studio manager), the 'golden ears' which enable the user to anticipate or represent the ears of the eventual listeners. This represents a challenge to the decision making power of the producer, as the system of calculation appears to shift from decisions made using the organisation of sound wave characteristics, room design and performance attributes, to decisions according to the market, represented by the A&R agent. While the producer's organisation of the recording studio identified in the previous two chapters, enables them to frame themselves as having the 'production ears' and thus decision making power. Claims to possess 'market ears' are more difficult to restrict. Problematised in this way, *"everybody's a producer"* (Martin Kato: artist, producer). A&R representatives can claim to have the golden ears, and the power to make sound quality judgements spreads beyond the producer. In the words of studio owner Dennis Hinton describing a session that was happening during my visit:

> *"You get a lot of jumped up managers thinking they're the next thing to grace the production world."*

These judgements of the A&R representative or artist manager can be specific to particular instruments (Pat Stills), song speed (Nigel Harris) or song arrangement (Jonathan Coe). However, the main system of calculation evident in these discussions concerns the volume of the overall mix. As seen in the use of the large mounted monitors in the studio, volume is regarded to be a critical quality by A&R representatives (Cliff Target: studio manager, producer). This is not to suggest that they alone valued volume. Producers also expressed the belief that high volumes can make a song sound better. For example:

> *"I mean the silliest thing, and yet it's the truest, is that the first step in making something sound good is to make it louder, which is kind of obvious really. If you sit and listen to a record at home and think 'I quite like this,' and then you turn it up, It's got better!"* (Charles Church)

Ira Baker suggested that the preference for high volume was because the act of listening was not a purely auditory phenomenon, but a bodily experience. The feeling of sound waves crashing through one's body adds to the sensory pleasure of listening. More volume more sensation. Though this view is intriguing, other producers that brought up the use of volume as a product

quality issue offered a more prosaic, relational explanation. This was that A&R representatives evaluate the mix against other songs that they are listening to, particularly on the radio and from amongst their own record collection. This presents a problem for producers. Their difficulty is because the mix has not yet been mastered (a process that increases volume), it sounds different to the mastered songs against which the A&R representative may be comparing them:

> *"They don't know, for instance, that whatever you do in a studio and however it sounds when you mix it, it's going to sound different when it's finished because you have like the whole mastering process that's going to happen as well and they think that what comes out of the speaker in the room at the time is how it's going to sound on the radio and it's like 'Well, it's not going to sound like this. It's going to change.' We all know this, but they don't seem able to learn it."* (Dan Shepherd: artist, producer)

The tactic of playing the mix on very loud speakers during A&R visits to the studio doesn't apply once the mix is released, and A&R representatives listen and judge the song on their own equipment against existing songs they are listening to, or genres they hope to position the song within. As this frame of calculation is outside their control, producers are left to trust the ability of the A&R representative to be able to 'look ahead' and judge the pre-mastered mix as it would be after mastering. This ability or practice is, however, variable. As producer Ian Wood recounted:

> "*They have to understand or they have to have heard enough… I mean with some people that I know, then I can send them a totally unmastered mix as it comes off the board, you know, and say 'Right, that's the mix.' And they'll know that it's a bit quiet and they'll just turn up the stereo because that's all you have to do really. I mean literally it's that stupid, but then you never know whether the A&R guy's listening to it in his car or on iPod headphones so, you know, compared to the previous track it's so quiet you can't turn it up loud enough."*

In response to this non-conformance of calculative reference, producers described how they would seek to influence the way the mix was assessed. This was attempted by increasing the overall volume of the mix through increased compression and EQ adjustments, in order to make the song more comparable with radio and CD recordings and thus win the support of the A&R representative. However, as the song has not yet gone to mastering and onto radio, where further compression is added, the final sound quality of the song may be damaged through this doubling up of volume increasing compression, making the listening experience

"uncomfortable" (Martin Kato: artist, producer) and akin, as one engineer/producer described, to having someone shouting in your ear:

> *"I don't think they [A&R] understand enough about the recording process and I think there's too much pressure on producers to get mixes so loud they sound like they're on Radio 2 already and God knows what it's going to be like when it hits Radio 2!"* (Owen Faulks)

The point here is not necessarily to propose that such anticipatory practices serve to damage the sound quality of the released musical product. The difference in view between producers and A&R representatives over the merits of the currently highly compressed songs was often presented, during interview, as an aesthetic one. For example, Harry Stammer, who also teaches production, reported that when he played highly compressed songs alongside less compressed songs with more dynamic range, his students preferred the sound of the compressed songs. The intention of this analysis is not to engage in aesthetic judgement, rather to identify and explain the shift in sound qualities and therefore their accompanying systems of calculation, from balanced tracks and dynamic range of the producer, to the volume of the A&R representative. The explanation for this shift in decision making quality, following the arguments developed during analysis of the early formation of the recording project, and the recording, editing and mixing practices, draws on the system of relations that form the production and listening act. In this case, as before, the relationship between the emerging song and those already in circulation is constructive, though in this particular period of judgement, one quality becomes dominant, volume. Also important is the audio equipment that is used to broadcast or reproduce the song. Both these relations will feature further in the analysis of this final moment in the production of a musical commodity.

6.1.2 Decisions and changes to the final mix: the use of stems

We now turn to the second important aspect of the handover of the mix to the record company. This concerns the contents of the mix CD provided by the producer on completion of contract. As well as the mix designed to be mastered, the mixdown, the producers also send instrumental mixes so the song may be used in adverts or for TV performances *"where they [don't] have the*

facility for the band to play live but the singer could sing live" (Pat Stills: engineer, producer). We will pick up the matter of live performance later on in this chapter. At this point in the analysis we will maintain a focus on the contents of the song material exchanged at the end of the producer's contract.

In addition to the final mix and the instrumental version, two other kinds of files can also be sent to the record company: each track file for all the instruments and recordings used to mix the final version, and a set of variously combined tracks called 'stems'. The difference between the two is important. If the A&R representatives of the record company want to make a change, then they contact the producer, as we have seen earlier. This is because, the mixdown, as a stereo file of the entire collection of tracks, no longer allows access to individual tracks and changes to particular recordings or instruments cannot now be made. Each individual track is provided on the CD given to the A&R representative, but as producer Jim Thomas described:

> *"I know that it will be easier for them to come back to me if they want to tweak anything than to give all the parts [separate tracks] to someone else to do or try to do a recall from all the parts...I retain that control that way."*

The important point is that the other kind of music file on the CD, the stem files, do however, enable adjustments to the mix to be made without necessarily involving the producer. Stems are mixes of instruments or parts of the song representing different sonic treatments and combinations. As Ian Wood describes:

> *"So if you imagine all the constituent parts - drums, bass guitar… - so if I was mixing stems, then I would do kind of drums and a stereo drum stem, stereo bass stem, maybe rhythm guitar, lead guitar, major keyboard parts, minor keyboard parts, noises and effects, lead vocal on its own, backing vocals on their own. So you'd have maybe nine stereo pairs, but that's condensed down from maybe a 50 or 60 track multitrack so you end up with nine."*

As stems are a series of grouped tracks, they reduce the possibility (frequently raised, as we have seen, by producers in defence of their mix) of making track level changes that interfere with the overall mix. With a drum stem for example, changes to the overall volume of the drum sound can be made without having to try and adjust one of 10 tracks that may lead to obscuring of the other nine or of having to rebalance all 10 following the change. The same consideration

also applies to guitar tracks. Rather than adjusting one guitar track and risking changing the other layered and sound treated versions of the guitar, a change can be made to the guitar sound as a whole. The simplified character of these stereo mixes does limit the degree of change, *"If you don't like the snare drum sound, then the drum stem is useless"* (Ian Wood: producer). However the important point is that they do enable change such as increasing the volume of vocals or other parts of the mix without carrying out complicated recalls that require a producer. Such a situation maybe necessary, if, for example, the mix had been carried out in a room with undesirable sound management:

> *"You know, a lot of people mix now in not amazingly suitable rooms, so if you've got the vocal level wrong and you mix your album and the vocals and all the choruses are getting lost and you can't hear them, then you could go back to the stems and just for the choruses turn the lead vocal off and then it works..."*

In this way, stems, because they are made up of a number of mixed tracks, function as a basis for rudimentary remixing able to be carried out by non-producers, such as A&R representatives. Engineer and producer Pat Stills describes a typical conversation:

> *"Now they say 'Oh, can we have stems?' stems are this thing where you give them stereo drums, stereo guitars, all the guitars with all the volume alterations that have on in the mix, all the effects that were added to them just as a stereo mix. So in effect you could take all those stems, put them into a blank session, line all the faders in a row and your mix would play back exactly how your stereo mix did and then someone at the record company if they decide 'Oh actually, I want a bit more of something,' they can just turn that one particular…[instrument/sound effect]"*

This is not a development that was welcomed by Jim Thomas, who recounted a conversation with an A&R representative over a song he had submitted:

> *"Yeah, and often when that's the case you do recalls or you used to do recalls, but now with stems they can say 'Oh, it's okay, I'll just get my monkey to do the recalls with the stems,' and it's like 'No, you bloody won't!'*

This ability of A&R representatives to unilaterally reverse decisions taken by producers on the mix of tracks, was, as identified by the above quotation, an unwelcome development for some producers:

> *"I have never given them stems. That means they can destroy it."* (Nigel Harris)

> *"It gives them [A&R representatives] too much choice and I don't really trust them!"* (Jim Thomas)

For this reason some producers were reluctant to provide them:

> *"I don't give them stems. I do the stems, but I don't give them to them unless they ask. I tend to cover myself on all my bases, but I just give them exactly what they ask for and if they don't ask for it, I don't give it to them, and then if they come back and go 'Actually we need this,' I might go 'Oh, it's going to take me ages. Are you sure you want it?' but I've got it and I can give it to them if need be."* (Pat Stills)

> *"No if they really want the stems then I just ignore the phones, forget the email 'Oh sorry forgot to send it today mate'."* (Nigel Harris)

Discussions over recalls, or of limiting the use or availability of stems, does not of course prevent the record company, in the event of disagreement with the producer, or dissatisfaction with the mix, commissioning another producer to remix the song. An occurrence we will explore in the following section. The handing over of the mix does not signal the end of interest of the producer in the song, as they can sometimes remain in contact with the mastering engineer and there are contractual matters that will be discussed in the following section. However it does mark, as Dennis Hinton, manager of Studio E, a large, high specification studio, described, a point of *"separation"* of the producer that managed the recording project, from the song.

6.2 Enter, the mixing engineer

> *"Can we do this with stems? Can we fix that with stems?"* (Eric Efford: engineer, producer)

If the A&R representatives cannot negotiate changes with the producer, or make the required adjustments using the stereo stem files, they have the option of sending all the unmixed tracks recorded by the producer to another producer, termed in this instance a mixing engineer. Hiring an additional producer to mix the song is the final point at which changes can be made,

as the mastering engineer working from one stereo mix (mixdown) is not able to unravel the various tracks to make any required changes.

It is important to note that the interposition of a mixing engineer between the producer and the mastering engineer is, as we saw with the disaggregation of studio use, enabled by the practices of separation and track by track recording identified in the recording practices discussed in Chapter 4. In this case the multitrack recording practice allows the mixing engineer to go back in time and return to a pre-mixed point in the recording project. Here is Dan Shepherd describing being given such a mixing job:

> *"They gave me the multitrack which was DVD, sort of 24 bit recorded audio and I couldn't believe what I saw when I opened up these files. There were like 4 of everything. It's like he'd miked up the snare from above, he'd miked it up from below, he got like an ambient mike there; he used a valve microphone to record a guitar; he'd got a dry bass part - he'd got one that had been through some machine of his, you know."*

The DVD contained all the recorded tracks, plus the tracks created by adding production effects, disassembled and available for Shepherd to work with. The actions of a producer are therefore not exclusive, but can be repeated. This resetting of the clock affords the mixing engineer the same degree of control as the preceding producer over the sound qualities of the song:

> *"I mixed a track recently and transformed it basically. I made it sound much… I have to say much better than it was. I mean that's why it was given to me. Basically some people had recorded a song, they'd done all the recording, but when it came to the mix they hadn't been able to really make it sound very good. It just didn't sound quite round. Even though the recording was good - the vocals were there and all the rest of it…"* (Harry Stammer)

There is therefore an overlapping of roles between the mixing engineer and producer, with both regarding mixing not as a separate stage but part of the production of sound, and thus the territory of the producer. As Keith Nemo describes:

> *"I've been on projects where I've produced a record and then they've decided to have someone else mix it. You know, mixing is the thing at the end. When I say it's at the end - it's a major part of the process where having recorded all the instruments, you play all the instruments back and they all come up in separate channels and you can change the sound of things and it's like painting a picture in a way. So it's the big thing that affects the overall sound of the production. They didn't like my mixes, so they got someone else to mix it..."*

Harry Stammer, a mixing engineer also uses the control of sound to claim the title of producer:

> *"I mean I'm known as a mixing engineer and I guess that's why I say this in production, but you could describe me as a producer as well probably by virtue of the fact that when you're a mix engineer, you make the final record. You decide on the final balance and pretty much how it's going to sound."*

Identities, and their associated roles are thus contestable. With the importance of mixing in the construction of the sound of a song threatening the identity of a producer as the creator of the song's sound qualities. A view illustrated by Ron Cheyne, owner manager of Hope records, in a description of one mixing engineer he used:

> *"There's one guy that we use a lot in the States. His name escapes me, but we use him a lot on kind of… certainly sort of more kind of acoustic type things and he's brilliant. He's absolutely brilliant because he can make something sound sonically just amazing. Far better than a producer could."*

Separated from mixing decisions, the task and responsibility of this reframed producer appear closer to one of song arrangement, performance capture and the creation of a range of sound affected tracks. It is this prospect that led Dan Shepherd to suggest that:

> *"Record production is pretty much dead as an art form and what you need are people who can mix really well."*

The reference to production as an art form is important, as it links to explanations offered for the reframing of the producer's role through the introduction of a separate person to conduct the mixing of the tracks. Namely, the view that artistic or creative judgement was endangered by being part of the recording project. This is a version of the 'objective ear' argument that we saw in the assertion of the producer's power over the writers and performers of the song, the artists. Recalled here using Sally Johns' explanation for why the artists she manages, who are also producers, rarely produce their own material:

> *"They're [artists] just too close to hear which things need to be toned down basically. I think there's a tendency to over-clutter everything because you remember recording every different instrument, therefore you want to hear it all and sometimes less is more I think."*

In the mixing engineer variant, the need to be separated from the process of recording, with its repetitive listening, long hours of meter adjusting, and sound effect manipulation is justified

through the belief that these tasks are somehow inimical to the selection and organisation (panning, volume levels) of the tracks; the final creative assembly. As is illustrated in the following explanation:

> *"Because it [mixing] is a creative process and very often once you've recorded something and spent a lot of time recording it and overdubbing, it can be a long time, you know, and you lose perspective and you my not be able to see where it can be improved anyway. I'm trying to think of an analogy to that. It's kind of you can't see the wood for the trees. It's that kind of thing."* (Harry Stammer: producer)

Even Jim Thomas employs this reasoning when accepting that there is a role for mixing engineers on recording projects where artists have self-produced:

> *"I guess one of the reasons is because a lot of bands like say Goldfrapp, Tom [Amhurst] did an album with them. Tom did the second album for them and bands like that, bands that are basically self-produced sometimes need someone like that. I mean admittedly that really happens of course because they're too close to it - they've written the songs, they're really close to it and they want someone with a different hat on."*

But he rejected the reasoning when it was applied to recording projects that were run by producers:

> *"One thing that really I find most irritating - if I can have a rant for a minute - is the whole trend towards mixing engineers.... You get some really excellent mixing engineers, don't get me wrong, but I think how can one expect a mixing engineer who's really learning a track…. And those guys do those mixes in a day or a day and a half, you know. They get the parts, they mix it in a day or day and a half. How can they be expected to kind of learn the intricacies and the position of parts that the writer's mind or the producers of the track have worked really hard in making this part just fit here in that corner at 2.30 [reference to panning] with this amount of EQ and this amount of compression? How can the mixing engineer be expected to fit those intricate details of a production? You know, it can't possibly work."*

Decisions and the value of those decisions may not be discernible by another producer working with the files created by the original producer. The suggestion here is that because the reasons for the decisions made by the producer are not perfectly transferrable then this requires the continued control of the producer, a form of action at a distance.

As mentioned, the use of a mixing engineer can also follow dissatisfaction with the producer's mix, as illustrated in the instruction given to Harry Stammer:

> *"What they did was they give me the rough mixes and said, you know, 'You can hear they're not working. That's it. Get on with it'."*

However, mixing engineers are also brought in for another reason, to combine the songs of different producers to form the artist's album. The hiring of one person to *"tie it all together"* has clear transactional advantages for the A&R representative, should they wish to introduce changes to the producer's work particularly when that person is an outsider to the recording project. It also speaks to a theme identified in the previous chapters, the importance of maintaining the illusion that the song is a recording of a performance.

Mixing engineers were described as needed to create a coherent sound for the album often made up of different producers, studios and sound treatments. Producers acknowledged the virtue of somebody constructing a *"homogenous"* sound (Jim Thomas) over the range of tracks on an album. This is because the value of a recognisable genre classification and a degree of comparability with other currently successful songs is disrupted by an album made up of a collection of songs with differing sound treatments. It also resonates with the analysis in the previous chapter, where importance was placed on the ability of the producer to conceal the artificial nature and process of the song and its 'recording'. Removing the variability of sound treatments across the differently produced songs has the effect of removing the evidence that the songs were constructed, not performed and simply captured, but the result of the producer's ability to change the sound of the artist.

Notwithstanding the value of a homogenous sound over the song of an album, the changes of mixing engineers, as illustrated in the previous quotations, were not always welcomed, *"it was like somebody had beaten up my child"* (Jeremy Hope). Producers were concerned at the surrendering of decision making control that passing the mix onto a mixing engineer signified:

> *"I mean it's not just me that moans about it. All like good producers are moaning."* (Jim Thomas)

In response, producers secure guarantees through what, producer manager Sally Johns, described as standard producer contracts. These contracts, while recognising the ownership of the sound files by the funding party, the record company, sought protection in the event of their work not being the final version. For example, that their royalty and fee would not be reduced if their work was remixed. Similar protection covered the requests for recalls discussed in the previous section. Producers described how they would agree with the record company that they would be invoiced for their additional time (Pat Stills). However, attitudes to the contractual ownership of the song files varied according to the status of the producer involved. Newer producers such as Ian Wood stressed that it was important to make record companies and artists happy with what he had done, artist/producers such as Nigel Harris described trying to prevent the record company getting their way and established producers such as Keith Nemo described asking for the ability to remove his name from any remix song he didn't agree with. In a move that reinforces the analysis made earlier on the importance of credits and reputation:

> *"Well, let's make sure the credits are clear about that, you know, or take my name off."* (Keith Nemo)

So contractual protection for the producer is not authorial, but can be financial and reputational. In the case of experienced producers such as Jim Thomas, they ensure that the hiring of mixing engineers does not reduce their payment and royalty recognition. While newer producers represented by producer managers interviewed, were less able to insert such protection and had their royalty rates reduced. As pointed out by Jim Thomas, this requires that the artist pay for the extra mixing, effectively doubling the producer costs of the song, as was the case when describing working on *Ladyhawke's* recent album:

> *"...the record company's spent 4 grand on paying Tom [the mixing engineer] per track - which is almost the same price as… well, about the same as what they pay me including studio time and everything - just for one day and a half mix."*

The high rates charged by mixing engineers, described as "silly money" by Thomas, reflects the belief of A&R representatives over the importance of sound qualities in general, and the consistency of the tracks in particular. This is rather double edged. On the one hand it demonstrates the enrolment of A&R representatives in the producer's problematisation of the

value of songs being tied to the qualities of sound. On the other it has meant that A&R, unable to influence sound qualities as they are controlled by the producer, hires additional producers to work on the sound, thus restricting the agency of the original producer. As with producers, a mixing engineer's reputation, tied to market performance and institutional awards, plays an important part in their use (Dennis Hinton: engineer, producer, studio manager). Indeed, in one example told by Jim Thomas, the reputation of the mixing engineer was all that was used:

> *"On the Ladyhawke album, two of the tracks that he mixed, we used my mixes in the end and just to avoid politics I said to the manager 'Look, say it's mixed by Tom, but use my mixes because we're all agreeing that it's better,' you know, because then it becomes record company politics because and of course the A&R guy's not going to go 'Oh yeah, you're right, we've wasted 4 grand.' Already politically he has to love that mix more because he's spent 4 grand on it. And also Tom has had two Grammies with Amy Winehouse, so he's like…You know, it's already a sales point, if you like. Oh, it's just crap."*

This account of the use of mixing engineers is revealing. It illustrates the difficulty of deciding when a project has finished, the multiplicity of views involved in the decision as well as reinforcing the reversibility of the process of musical product creation, as, in this case they returned to the original final mix. We can also see how the reputation of a producer extends beyond the pre-production meeting when the selection is made, and travels inside the record company to be used by A&R representatives in the defence of their actions. It is also interesting that Thomas, albeit with his royalty protected, allowed his work to be credited to another producer. In this way Thomas can also benefit from the reputation of the producer and increase the value of his royalty through the increased sales it is likely to bring. His contribution is not totally unrecognised as he was credited as original producer. Once the mix is finally declared to be finished, a stereo file of the song is sent to the mastering engineer and the final leg of its journey to market begins.

6.3 Stabilising reproduction: mastering music product

"You've probably heard of the level wars thing?" (Calvin Miles: mastering engineer)

The final stage in a recording project is the creation of a master version of the song, from which to reproduce copies for distribution and sale. This section will consider the practices and systems of calculation involved in this final stabilisation of the product. This discussion will revisit and extend analysis on the use of volume introduced previously. Before we do, a minor but crucial task carried out during mastering requires mention. As part of this transformation into musical product, the song is labelled or encoded with information on its title and the artist's name, enabling media players to recognise the song and display its identity when played. The song is digitally tagged by being given a product code called the International Standard Recording Code, which allows its sales and broadcasts to be tracked, logged and royalty payments to be counted. Mastering also prepares the song for its appearance as a musical product by making changes to the sound qualities of the song. As we shall see, the practices that result in changes to the sound quality of the song are, as we encountered with recording, sound effects and mixing, relationally organised and characterised by systems of calculation that connect and perform the practices of production and consumption.

6.3.1 Preserving the illusion: constructing the album

Descriptions by artists and producers referred to the mastering of songs as an act of transformation, a change from a recording project into a product ready to take its place on the shelves of retailers and among the playlists of broadcasters. Jim Thomas recounted how artists, upon listening to the mastered version of their work exclaimed, *"Wow, it sounds like a record!"* Singer-songwriter Roger Scope echoed this sentiment:

> *"Mastering still seems like magic to me. I don't know what they do. It's like sorcery. It's just you send it to them as a mix and it comes back as a record."*

While engineer/producer Charles Church framed mastering in the same terms:

"There is definitely a difference between a recording and a record."

There are two types of record, the single song and the album, a collection of around 10 or 12 songs. The album is released, accompanied by a series of singles designed to generate revenue, but also to encourage the purchase of the album. An important part of the transformation of a recording into a record is therefore associated with the construction of the album. This involves sequencing the songs and creating gaps between them, so that the songs flow together and take the listener through the album from beginning to end (Calvin Miles: mastering engineer).

The importance of encouraging the listener to listen to the whole album was revealed in the reduction of time between each song. Where albums had gaps as long as 7 seconds 20 years ago:

> *"You couldn't even dream of going there with like 3 seconds, you know. That's like a year nowadays!"* (Mick Miller: mastering engineer)

The sequence is agreed between the record company and the mastering engineer, and is moderated by the mastering engineer's ability to create a sequence of songs that don't, in terms of their sound characteristics, jar and threaten once again the valued sense of cohesion across the album.

Mastering, as with mixing engineers, where employed, is therefore engaged in the creation of making a whole out of the songs created by a number of different producers in a multiplicity of studios. The album as a product, is again described in terms of consistency:

> *"The mastering guy just evens it all out and makes it sound like an album."* (Pat Stills: engineer, producer)

This 'evening out' can be viewed as part of the construction of authenticity identified in the previous chapter. Of creating a collection of songs that, through their sound qualities, appear to have been created in the same space by the same people and making a whole. This is central, for if the album were made up of songs with too radically different treatments of sound, it would

through exhibiting the range of different sound treatments applied in the construction of the songs, reveal the presence of production and mixing interventions and the wide gap between what the band or artist performs and how it eventually sounds. As producer William Wallby, put it:

> *"I think the mastering guy is the key. He's got to make them all sound like all the eggs came out of the same chicken."*

The changes made to the song by the mastering engineers involve applying compression and equalisation to different frequencies within the song. However in contrast to mixing, mastering is described as evening out and enhancing, rather than altering, the sound characteristics of the producer and mixer. So, in the words of Calvin Miles:

> *"...people haven't got to, you know, get up out of their seat every time another track comes on and change the tone control, change the volume controls and that sort of thing."*

Designing the song's sound quality around the removal of the requirement to make any adjustment during the listening act that may include a range of different artists, is a further case of enrolment, this time of the listener. To achieve this, mastering engineers, like producers, bring in representations of the outside world, the place where the listener will hear the song. In this case it is to hear what effect their volume enhancements had on the different tracks within the song:

> *"We have a set of like the worst speakers we could buy, which were these little JBL things that actually cost less money than... They're sitting on these bits of foam and the foam cost like 60 quid and the speakers cost 40 quid."* (Mick Miller: mastering engineer)

Mastering appears to be clearly aligned to support, rather than challenge, the decisions of the producer. The view that the mastering engineer is not involved in changing the song, *"It's not for me to have my presence on the track"* (Mick Miller), is seen in the importance attached to which song to select as the mean, the song around which all the other songs will be normalised (Calvin Miles). The right song was described as the one where the mastering engineer doesn't have to make radical changes to the other songs in order to create the desired cohesive quality of the album (Mick Miller). The role of the mastering engineer to enhance, not fundamentally

change, is reflected in the lack of royalty payments for mastering and limited by the stereo files that the mastering engineers work with. As they are working with a mixed stereo file the engineers can change the frequencies of different instruments on the song, for example, but because they don't work from the tracks or stems of individual or groups of instruments, that frequency change may also affect other instruments within that range. This is part of the producer's ability to act at a distance, fixing the sound qualities of the song through the stereo nature of the final mix. Changes requested by record companies reflected this ability, with mastering engineer Calvin Miles, describing how when record companies didn't like the production of a producer, would say, *"Can you do anything about that or do we have to do a remix?"*

Mastering is thus framed as an activity that does not involve engaging in the production decisions of the producer. This is supported by the producer's notes that may accompany the stereo mix *"please don't touch this"* (Nigel Harris) and operate as a form of distanced control, further supported by the limitations of the stereo file they work from. That said, the contribution of the mastering engineer is still regarded as significant in the preparation of the musical product for market[6]. This revealed in the following quote on the importance of mastering:

> *"I've even sat in a mastering session where actually there's been more than one producer, but only one producer out of the 3 or 4 or whatever it was turned up and has gone 'Okay, well I want my stuff to sound great and I don't want theirs to sound very good'."* (Calvin Miles: mastering engineer)

We can now begin to consider what sound qualities form the basis of this valued enhancement. As before, the control over sound is critical, achieved through knowing the way sound is reproduced in particular spaces by particular monitors. To this end, mastering rooms have the obliquely angled walls of mixing and control rooms and monitors that in the words of mastering engineer, Mick Miller, enable them to inspect sound frequencies and *"hear things that other people have never heard"*. The knowledge of how the monitors and rooms treat sound frequencies confers decision-making power to the mastering engineer in the same way we saw

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[6] To associate themselves with recordings that mastering engineers particularly liked, engineers would inscribe their name (Ray Staff would use 'RAYS') on the run out groove of the masters. This augmentation of the credits system is lost with the introduction of digital recording.

with the control room in Chapter 3. The use of the room to enrol other participants of the recording project in the framing of decisions and decision making power was useful during what were described as 'attended sessions', those sessions where project members such as producers, artists and record label representatives. This is illustrated in the advice producer John Hinger gives his artists:

> *"Well you go along, but remember that, you know, the guy really knows what he's doing. He's used to those speakers. You're not used to the speakers, so unless you've got something pretty important to say, keep schtum."*

And is reflected in Charles Church's attitude to mastering engineers who ask for his view on the treatment given to his production:

> *"'Well, what do you think?' and I'm like 'Well, I'm paying you because you sit in this room for 10 years and you know these speakers better than anyone. So that's why we're paying you'."*

While the sound treatment applied by mastering engineers was described as a *"black art"* (Owen Faulks: engineer) involving the pressing of the *"magic buttons"* on expensive equipment (Mick Miller's new mastering room contained £70,000 of kit) the central element of the mastering process appeared to involve increasing the volume of the song without distorting the sound (Ian Wood: producer). Distortion occurs when the bit depth, the number of levels of sound, from the quietest to the loudest, is exceeded. The bit depth is limited by the number of combinations possible within the binary digit system of digital representation, the point at which all combinations is reached is termed digital zero. Distortion is to be avoided in digital sound recording and reproduction for, unlike in analogue systems where the distortion effect is gradual and can, in limited use, be regarded as part of the desired sound, hitting digital zero creates a harsh, unwelcome, clipped sound. However, increasing the volume of a song is not simply a matter of turning up the fader to the desired decibel reading, there are different qualities of loud. As mastering engineer Mick Miller describes:

> *"It is kind of really open sounding. So it's loud but without sounding squashed, which is a trick. You know, everyone talks a lot about compression about mastering and I find that it's actually quite over-used and actually that's part of the problem with loudness – that a lot of stuff is over-compressed to get it loud and then it becomes kind of a bit mushy loud rather than open loud. I mean we're trying to send stuff out that's competitively loud but sounds like it's open."*

This ‘open loud’ quality is what artist Roger Scope was referring to when he described mastering:

> *“... it sort of breathes real life into it. You know, they talk about breath a lot. You know, ‘We just put a bit of breath, a bit of air at the top,’ and at first I was going ‘A bit of air at the top?’ but then they do something. They hit the magic button and suddenly you can hear it. You know, you can sort of visualise space at the top of the track. It kind of gives it space to breathe.”*

Creating ‘good loud rather than bad loud’ (Mick Miller: mastering engineer) is an aesthetic judgement and resists classification. However it does appear to involve using compression and equalisation to arrange the frequencies of the song that so the transients are not lost while maintaining a high average volume. This is another example of the stabilisation of the song, the fixing of sound qualities to survive during the variety of reproduction environments, in this case when played loud.

6.3.2 Qualities of sound: volume

The importance of volume is that as with other qualities we have identified, it is part of a system of calculation that guides the decisions of the music project protagonists. However, volume as a quality is different, in that producers and mastering engineers are not able to control its application and calculation in the same way as we saw with accuracy, separateness and authenticity. Two aspects of the recording project reduces the ability of mastering engineers to make decisions on the final version of the song using this quality of ‘open loudness’ or good loud.

Firstly, the character of the mixdown created by the producer can reduce the degree to which the mastering engineer can act. This can occur if the mix is highly compressed in order to increase the volume of the song (without increasing the dynamic range and thus exceeding the bit depth) and thus please the record label representatives who, as described in the previous section, are comparing the mix with already mastered songs. As equalisation and compression used by the mastering engineer will add additional volume, loud, highly compressed mixes can prevent or

highly restrict what an engineer can do to a song. The stereo mix makes reducing the volume of individual tracks within the song impossible, and mastering engineer Calvin Miles, described decompression, of undoing the limits placed on the dynamic range of a song so that he can rearrange the frequencies, as very problematic. This is not a case of distanced control on the part of the producer. This appears to be an unwanted effect of the systems of evaluation between the producer and the record company appear that we identified during Section 6.1. The producer, to create a favourable comparison for the A&R representative when reviewing his work, may increase the volume of the mix track and cut into the mastering engineer's ability to increase volume without damaging the sound of the song.

Secondly, the pressure to produce loud mixes is also applied to the mastering engineer adding to their reduced ability to control decisions made in this quality. As this experience, recounted by Mick Miller illustrates:

> *"I did this album for a Turkish producer. It's a world music album, it doesn't need to be loud. I made it really nice and he said 'It sounds amazing. It just needs to be a couple of dbs louder.' 'Are you sure, mate? I don't think it does.' 'No, I was listening to some CDs.' 'Yeah, but that's not dance music.' 'No, I'd like it to be a couple of db louder.' 'OK, you are paying the bill... I'll ruin it for you if you like. It's your money'."*

This is another case of representation. The use of volume as the key system of evaluating the song during this stage of the project is associated with its quantifiable translation. Volume as a quality comes with a number that can be asked for in the mastering room or read off a computer screen:

> *"Everyone's got kind of wave editors at home and laptops and everyone's got a bloody studio on their laptop now, so as soon as those masters come back they get ripped into things, they get looked at, they get listened to and if there's a little bit of space left, 'I'll [ask the engineer to] squeeze a bit more in.'* (Mick Miller: mastering engineer)

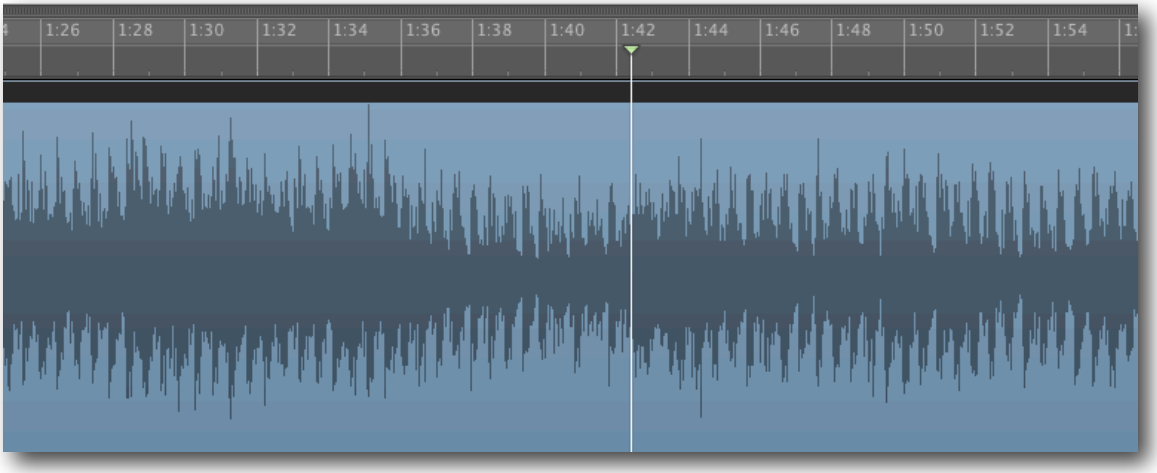
In addition to the use of volume readings, A&R representatives also use visual representations of the song to make judgements over sound quality and support their ability to intervene in the decision making process. Each song can be represented as a sound wave, and by looking at how thick it is, determine whether the song is loud. This is important as these representations can be enrolled by A&R representatives to shift the decision over the appropriate volume level from a

matter of individual judgement, from the ears of the mastering engineer, to their eyes. As Mick Miller continued to describe:

> *"Some A&R look at wave forms to decide whether it's loud and if it's kind of really smashed then it's good and it's like it can sound awful, but as long as it's really massive."*

The following image is an example of what they look at:

Image 16.



'Never mind the sound, look at the width!'

Close up of a mixdown sound wave.
Source: author

Another feature of volume as a system of judgement that escapes the control of mastering engineers is that it is highly comparable. Songs, whose sonic characteristics and musical arrangements vary, can be aligned and assessed by comparing their relative loudness. Calvin Miles described a typical practice of A&R representatives:

> *"Well, quite often they'll put on someone else's CD they know and go 'Well that's really loud. Well why's mine quieter?' and you have to say okay."*

The result is known as the 'level wars', where A&R representatives compete according to volume. As is illustrated in this account from Dan Shepherd of an A&R representative visiting the studio where he was mastering an album:

> *"The guy from EMI came into the studio to listen to what we were doing and it sounded amazing, and he had nothing to say about how good it sounded, but what he said was*

'Just make it half a decibel louder than the Warner's one so that we have the edge'."

The way that songs are broadcast alongside other songs competing for sale, or selected from online playlists also contributes to the *"fear of being quiet"* (Calvin Miles: mastering engineer). Mick Miller described artists as being brave by deciding to go with a lower decibel level that gave the song greater dynamic range and a more open sound. Discussing the low sales of the song he had mastered with an artist, the song's relatively low volume, was identified as the crucial factor:

> *"...because when you're flicking around auditioning tracks, the one that jumps out of the speaker on your little speaker is the one that gets your attention. So you maybe give it that little bit of extra time whereas the one that doesn't jump out might musically be better and on a big system sound gorgeous, but the other one was brighter and louder and faster and angrier and, you know, it's just you haven't got the attention span."*

The importance of volume as a song quality was also felt to be significant once the album or song had been bought. Songs from one artist are played next to another, and, as Calvin Miles noted, the CDs should feel as though they belong "on the same shelf, you know, ...not just miles and miles apart". When played on iPods with their 'hands off' shuffle function, the danger of non-compatible volume was all the more acute. Recalling a Techno album Mick Miller had mastered he said:

> *"It sounded amazing and it sounds great on a laptop / on an iPod if you're prepared to turn it up, but if you do it on a shuffle it just falls on its arse."*

So, as we saw with production, mastering involves preparing songs for the media that will reproduce them. Dominant in this preparation, is the use of volume as a system of calculation comparison and action. However unlike other sound qualities that are enrolled by producers to align practices and systems of calculations to support and frame their discretionary power, volume escapes and its representation is used by A&R representatives to assert their interests. Interests that are translated into a battle to increase the volume of their songs over that of others.

The completion of the mastering stage is often marked by celebrating with champagne and drinks. Relief and happiness that all the variables of the song and its sound have been fixed and

that a process of change and shifting systems of evaluation is finally over, *"just that kind of relief that there's no more kind of tinkering"* (Mick Miller).

6.4. Live performance

Although the recording project is now complete, and the decisions of the producer, mixing and mastering engineers and A&R representatives have been fixed in the sound carrier, these decisions are at risk if the artists go on stage and produce a version of the song that differs from the record. In the same way that the song has been created in association with broadcast and reproduction conditions, the integrity of the song and thus the value of the decisions reached in recording and mastering studios requires that the live performance of the song preserves these planned qualities. Too great a variance between the record and the live performance would reveal the assembled and manipulated character of the recording process and undermine the illusion, part of the system of calculation during the recording project, that the song was performed by the artists. Promotional efforts may also be diluted if the sound qualities of the song, so important for the establishment of genre identity and the ability of consumers to compare and evaluate the song, are changed during the live rendition. The power of producers is also weakened if their decisions do not extend to the stage, thus limiting their reach within the production network. What becomes clear when examining the practices and relational associations during live performance, is that the recorded song shapes the song in performance. In this way the stability of the studio decisions is maintained and with it the importance of the producer.

Observing the producer's actions during the recording project, artists become aware of the gap between what they can do on stage and what the recorded version represents them as doing:

> *"Most bands are worried about that. There's all these layers of guitars and keyboards and backing vocals. 'How can we do that on tour?'"* (Ian Wood: producer)

The answer is to use the stems we encountered earlier in this chapter. The producer, during the mixing stage creates stems for use in the creation of the record, and stems for use in supporting the live performance. As Eric Efford recalled:

> *"So it's often a case of they'll have a little think about it while the mix is going. 'Can we have a stem of this, this and this?' and that will be what they can play live."*

In this way the producer can link the two forms of the song, the commodity and the live performance to the studio decisions and ultimately to his action. Using a click track, the drummer leads the band so that the extra sections present in the recording such as string sections or layered guitars, can be inserted and accompany the artists during the performance. Live is more accurately viewed as composite of live and recorded sound. This, as in Eric Efford's description, ensures that nothing is 'lost' in the live performance. That the studio creation is carried forward to the stage:

> *"They'll basically run a sequence off live, just have a click on it that only the drummer gets so they know that it's four clicks and in so everybody's going to be in time and working properly with the sequences and it just means that some of those details that you can't deliver with a four or five-piece band - like a string section or something - are not lost in the live performance and you've still got that."*

The relationship between the studio and the stage was further illustrated in an account given by Pat Stills during his description of a recording project with a major international group for their recent album. One in which he worked as a mixer for the producer. During performance the band changed the bass part of a section of a song, and, working with the producer, decided to revise the recording. John describes what happened next:

> *"[name withheld] called me up about doing a mix he said, 'The band want to use the new bass part.' I said, 'Okay, but it is not recorded right?'. He said 'No'. He said, 'Hopefully the bass player's going to come in and we'll do that'. I said 'Okay fine', and then I found out they're too busy because they're on tour and then he said 'But what we are going to do, they're going to record the bass, the click and the vocal from three shows' and they put it on my website for me. So I had two shows from Dublin and one from Cardiff and they were all being done to a click. I sent the clicks up and I had a choice of the basses. I had the vocals so I knew whereabouts in the song they were, to check they were in sync and we used his bass which was almost all from one take except four bars from another take. Did the mix."*

Note the use of click tracks and accompanying vocals to support the editing and mixing decisions of the producer, practices that are associated with studio recording. Also revealing is the continued use of comping, or the editing of different tracks together. Even in an actual live performance the version that was used was not a copy of a performance but a combination of performances. This is due to the accuracy-based system of calculation used in recording projects, necessary for mixing separate tracks. Producing one take to the required accuracy is often beyond the performer, even highly experienced ones such as the respected guitarist of the major band described above. Charles Church, who recorded the reunion concerts of a major international band, also suggested that memory and emotion can play a role in the difficulty of using live performances in recordings, when describing how the group:

> *"...forget their parts and sort of splodge over bits to get through to the next bit where they remember the chords."*

Other limitations to live recording are linked to the analysis in Chapter 3, where we saw how artists were disciplined (multitrack recording/clean sounds) to perform the power of the producer by enabling him to discipline sound. If all the artists performed at once, there is the possibility that the sound waves of instruments will be recorded on the microphones of other instruments, thus making the later adjustment and change of that track very difficult. In the case of live performance, with artists unavoidably all playing at the same time this becomes a problem especially so because the artist, no longer penned in a studio booth is free to move around. Here is Harry Stammer describing a live recording project with an artist:

> *"I did a [name withheld] live DVD and I've recorded [name withheld] in the studio actually. So in a studio when you record him, all you've got on your vocal track is his voice. When he's playing live, I've got his voice and the spill of the drums as well, but of course it's not just the spill of the drums. As he moves around the stage the spill changes, which affects the other tracks in the balance. Imagine I have my drums at a certain level and then on my vocal track I have [name withheld] walks in front of the drum kit and suddenly the drums get louder in the mix because you're hearing more of them. So, you know, that's kind difficult."*

The striking point about live performance and its relationship with the studio version of the song is the way the notion of 'live' has been re-problematised to mean a studio supported performance. This was illustrated when Nigel Harris, lead singer of a critically acclaimed band,

described performing on the celebrated John Peel sessions, where bands would record a live session for broadcast on Radio 1:

> *"Like when you do Peel sessions you go in and do it live. Then you throw on overdubs afterwards and the vocals just so you can get it all sounding right. It was never live live."*

Notice here the reference to 'getting it sounding right'. The song's identity appears to be located in the studio, in the mixing and production practices used during its formation. The justification for not performing a completely live performance of a song varied. Ian Wood for example, explained how the dance routines that make up part of the live show of some, often solo artists, made concentrating on the performance of the vocal difficult. Referring to recent controversy over the live performance by an international artist, he defended the use of on-stage pre-recorded vocal tracks:

> *"I've worked with [name withheld]. She's actually very professional and very good. She's better than most Pop singers. She's in tune and in time. I think the live vocal thing is actually she's dancing around like she does and there's no way you can sing a good vocal."*

The live performance becomes, for some artists, a matter of display rather than musical performance. The artists dance to the tune of the record (or more accurately, the sounds of the producer) rather than play the music to the audience. In the process the song is able to be moved outside the studio without any of the sound qualities being changed. William Wallby pointed out that this practice was not a recent phenomenon. Identifying an international artist's Wembley concerts in 1987 as one, if extreme example:

> *"A guy I know was recording the concerts and the whole concert was all coming off two Synclaviers, which are big digital spouting machines / regurgitating machines. You know, the guitars and everything, there was nothing live. The whole thing was recorded, but it's the spectacle of the show and the artist and that's what people are paying for and that was 20 years ago."*

Producer and studio owner Anton Sprake, put the use of pre-recorded tracks during live performances down to a deskilling of the artists, who spend days working in a studio, singing only sections of the song with *"the producer playing around with pitch and everything"*. Add to this the fact that the artists or band members often don't play together during the studio sessions

and the difference between the two practices, studio and live, widen. Artists therefore have to learn how to perform their song after it has been created, *"they'll catch up and learn on tour",* said Nigel Harris, of a band he had recently produced.

With or without a supply of recorded sound from the studio accompanying the live performance, artists continue, as when operating in the studio, to be guided by the decisions of the producer. This is due to the effect of the size and shape of the room or open-air stage in which they are performing. The different frequencies of the instruments react differently to the space and the audience that fills it (Jo Berg: producer, artist). The highly variable nature of live venue spaces may mean that the vocals will need increasing in volume (Derick Lawson: artist) or the drums may not be audible to the other band members (Paul Macleod: artist). This is done by the live engineer, who adjusts the volume of amplification to counteract the shape of the room and preserve the mix achieved in the studio, as Ian Wood described, *"...he's trying to recreate the sound of the record, live"*.

The acoustic conditions of the performance space also require the live engineer to; as the producer did in the studio, supply the performers with a mix of the performance of the other instruments. On large stages this is especially necessary, as Paul Macleod explains:

> *"If you are doing a small club you can probably get away without monitors; just the vocals and the drummer. Because I can hear the guy because he is only 5 feet away but if you do a large stage that is...we did Hyde Park. The keyboard player was about 30, 40 feet away, the sax player was far away as well."*

The shape of the room and the size of the stage therefore require artists, as when recording, to be fed a mix of the song suitable for their performance. On stage monitors are placed in front of the performers and adjusted using a live engineer to relay the required mix back to them. As in the studio, the artists do not hear the song as the producer, or in this case the audience can. Describing a live performance at the O2 in Newcastle, Ned Gold refers to this connection between the sound in the studio and the sound on stage:

"I have got two monitors to myself, the other guys have got two monitors each, we can basically ask for what we got in the recording studio, so you can hear back what you want."

Below is a photo of 'Mountain Fire' at the 100 club performing the song recorded in Studio I. The black wedges are the monitors supplying a tailored mix of the song necessary to guide their performance of it.

Image 17.

Monitored Performance

'Mountain Fire' at the 100 Club, London.
Source: author

Artists performing on stage, are, as in the studio, separated from their song, enrolled by the behaviour of sound and its author, the producer. 'Mountain Fire' complete their performance and Simeon, the lead singer joins me. *"How was it?"* he asks.

Conclusion

This chapter has seen the song prepared for release outside the walls of recording, mixing and mastering studios. It is a point at which the producer is to some degree separated from the song though the use of stems and mixing engineers. Two qualities become central during mastering. One is the creation of an appearance of wholeness or consistency hiding the disaggregated nature of producers, studios and engineers that characterise the recording projects that, added together, comprise the songs on the album. And secondly, the use of volume to ensure comparability with existing songs during purchase decisions, broadcast, and private listening. We have also seen how the link between the studio constructed song and the live performance of the song by the artist is maintained through the use of stems to support and ensure that the decisions and sound qualities constructed by the producer remain attached. It has been an account of a struggle by different protagonists to get their version of the sound qualities upheld, to preserve or stabilise the song's qualities in the face of different replay technologies, listening environments, and different actors (artists, A&R agents and mixing engineers). A tale of the configuration of artists and listeners, enrolled in practices that, in the case of artists perform the producer's power to construct sound and in the case of listeners ensure they hear the product as intended. Interference by artists, record company representatives and listeners in the decisions of the producer is curtailed and the producer's power achieved. We leave this analysis of music production where we began, with the artists, this time on stage, but still disciplined by sound and those who control it.

I have analysed, over the course of the previous four chapters, the construction of musical product, tracing the performative relations and human material assemblies that constitute the recording, editing, mixing, mastering, broadcast and live performance practices involved. The analysis has made use of a relational perspective to the understanding of human behaviour, avoiding the use of unproblematised entities and metanarratives present in current explanations for the organisation of music production and consumption. This has necessarily, in order to highlight some of the key themes involved, made some limited use of concepts and perspectives drawn from actor-network theorising. The following two chapters pick up these themes and

fully elaborate their significance using a more explicit use of actor-network concepts, terms and reasoning to explain how the network of music production is organised. The explanation will elaborate these important themes such as the role played by non-human agents such as sound and space, the function of studios as laboratories, the performance of creativity, and the construction of song qualities such as authenticity. As well as setting out associations that perform the discretionary power of the producers, I will also look at points at which this is contested and a reformation of practices is possible. The story of the development of a product, it will be demonstrated, is also at the same time, a story of how systems of production and consumption are not merely linked by acts of mediation, as commonly viewed through the transmission paradigm of cultural production, but mutually constructed by interpenetrating relationships through which the song is stabilised and the production network aligned with the activities of reproduction and consumption.

Chapter 7

Performing popular music production: Sound as an actor-network

Introduction

The objective of the research enquiry was to investigate how the organisation of music production is performed and the construction of a product, the song, is achieved. This, at first sight rather straightforward aim, faced two significant obstacles.

a) Transmission

First, I argued that the influence of transmission-based theories of cultural production has resulted in the development of organisational and economic explanations that are poorly equipped to tackle the question. Working from assumptions over the structuring nature of capital and its inimical relationship with artistic attitudes and practices, currently available explanations of the organisation of music production are extremely partial and unsatisfactory. The existing literature highlights some aspects but conceals others. It considers some aspects of the production process: the selection decision of record companies, the decision to fund a recording project for an artist or groups of artists, and the promotional and distributional efforts and strategies used to maximise sales of the songs that result. But it largely ignores what happens *in between,* the creation of the musical product, restricting discussion when the issue is addressed to either the action of unknowable creative talent, the operation of technological forces, or the site of contractual disputes between artists and record companies over the suitability and number of songs, or the length of time the creation of the songs took.

My analysis has demonstrated that what in current explanations is portrayed as a simple activity in which a song is written and then recorded onto a sound carrier to be sold, is actually a process where the song is stabilised as a product with qualities and characteristics through the alignment of the practices of the protagonists (artists, studio owners, engineers, A&R representatives and mastering engineers) and the listeners. Because existing approaches take for granted the existence and identity of the product they miss the insight that for the product to achieve a seemingly independent status, interests and practices need to be aligned and behaviours disciplined across production, reproduction and consumption activities. The Pop song as a product is thus an accomplishment, one as we saw in Chapter 5 that involved the covering up its constructed nature.

b) Access

This gap in our understanding of music production is further perpetrated by the second obstacle facing investigation into how a song is made, the issue of access. A largely self-employed and peripatetic population, unused to requests for interview for academic research, make for a difficult to reach study group. Add in the rather exclusive nature of recording studios, with their sealed rooms, and unobtrusive public presence, and research on the practices of song production, as discussed in Chapter 2, is extremely thin. As a result, what happens in the studio and the wider record production process has been poorly documented, and the voices of producers, engineers and studio personnel, rarely heard. This research responds to this neglect by conceptualising music production as a relational achievement, illustrating this using concepts and perspectives drawn from actor-network theorising, and offering an alternative explanation for how popular music is produced. As a consequence the recording studio is reconceptualised from that of carrying out a technical function, unrecorded music in, recorded music out, to a laboratory that translates music into sound qualities, a centre of calculation that dissolves the difference between inside and outside the studio, between production and consumption, the creation of songs and their reproduction.

The music production network is an achievement, an alignment of interests and practices converging on the problematisation of sound and the producer's performed ability to organise and construct it. Reflecting on this analysis, a useful way to capture the scale of this accomplishment is to consider the durability of the musical product around which this story revolves, the song. The achievement of the music production actor-network, as explained in this research study, lies in the installation of the song as the representation of popular music culture. A short duration, verse chorus arrangement of music, comprising sound treatments conducted on layered tracks of separately recorded instruments. The disciplining of cultural production and consumption around this manifestation, continually replicated by diverse, independent, yet connected individuals for over 50 years is a significant accomplishment. Its success lies in its attaining the status of unquestioned form, a fact or truth that diverts attention away from alternative ways of producing, and alternative forms of representing, music product. Songs are therefore not merely outcomes, as transmission theories of cultural production would have it, they are an organising narrative and actant. They are complicit in the framing of the systems of calculation and the organisation of practices and roles that perform the music production network. The song is therefore both a fixed entity and a fixative, circulating the production and consumption network at the same time as producing it.

A poignant phrase used by interviewees in the study helps illustrate this dynamic. Producers, engineers and artists referred to actions taken during the creation of a song as one of fixing, 'fix it in the mix', 'fix it in the cut'. Two things are happening here. The performance of the artist and the sound of the music are being described in terms that justify some form of corrective adjustment. Yet this act of intervention in the attributes of the song is also part of the disentanglement of the artist from the product of their performance, and the establishment of product qualities that persevere during its use and reproduction. The act of 'fixing' is not a neutral moment, but a translation of popular music into a stable product suitable for mass distribution and reproduction.

To discuss this view of the music production network as a stabilising or fixative performance I will bring out and emphasise the analytic mode I have been working with, ANT. Developing the

analysis with concepts drawn from the approach, such as on the role of circulating references, centres of calculation, inscription devices and the performed, hybrid nature of agency. Importantly, the achievement that is the creation of musical product is not without challenge, and we will also discuss how the mutability of circulating references enables relational associations involving producers to be resisted and decisions reversed, threatening the emergence of rival ways of ordering the network. So the objective of this chapter is to draw together the themes that emerged from analysis of the research results, set them within actor network theorising on the organisation of people and practice and discuss their implications for our understanding of how musical product is made.

We will begin by considering the role played by the manifestations of songs, sound carriers, and then examine and discuss the uses and categorisations of studios, interrupting the discussion with some reflections on the importance of sound waves to the organisation of network practices. Then one of the key product qualities of songs, authenticity, will be analysed and its role in the distribution of power within the production network emphasised. We will conclude with a discussion of the points in the network where the current alignment of relations and the performance of producer power is contested. The chapter will end with an observation of the durability of the song form and its role in fixing the network of production and consumption in the arrangement we are familiar with today.

7.1 Circulation rather than transmission: enrolling the network

The transmission model of cultural production assumes a unidirectional series of discrete stages. A beginning and an end perspective, where a winnowing out process identifies artists and then captures their music, before concluding with the release of the chosen product into the market. This research has drawn a more circulatory, mutually constructive dynamic to explain music production and consumption. One of the ways this is achieved is through the construction and circulation of what can be described as immutable mobiles, representations in material form that

do not change during exchange and use, and become part of the performative practice of participants in the network. Two such immutable mobiles are the finished song in CD or music file form (sound carriers) and the textual credits that associate participants with the song.

7.1.1 Sound carriers as travelling agents

In contrast to the transmission model of production, where the observer is required to split the object (song) from the process of its construction, the argument presented here is that the recording project's achievement is to make the song immutable by stabilising its qualities and systems of calculation throughout the production process. During analysis of interviewee accounts, and observational episodes I identified the way that songs travel round the production network becoming part of decisions and systems of calculation at initial demo construction (Section 3.1), during the initiation of the recording project (Section 3.2 and Section 3.3), being part of the judgements of editing and the application of sound effects (Section 5.2), and during the mastering stage (Section 6.3). Identifying their involvement in decision making during the recording project, allows us to depict songs as 'circulating references' (Latour, 1999a:24), material representations of music and sound that inform the practices of music production.

Such references provide a means by which participants in the production network can identify sound, and bring it into the practice of production. Thus CDs and sound files are truly, as termed by practitioners, sound carriers, but their role is more active than currently acknowledged. They become a codifying mechanism enabling sound to be measured, judged and valued, representations that permit sound to be the subject in a discussion and a pattern to reproduce. CDs and the songs they carry should not, therefore, be viewed as mere context surrounding the actors within the production network. They are part of what in ANT terms is the assemblage, the hybrid collectivity that is an actor-network, and as we have seen, are part of the systems of calculation and quality assessment. Songs were present during the pre-production meetings between the producer and artists, enabling the negotiation over which sound the band was aiming for, and acting as a test to see whether the producer and artist(s) shared sufficient

understanding and appreciation of music to be able to work together. CDs continued to travel through the production process being used during discussion of the recorded sound to translate the relativistic metaphors used by artists, and, as during my observation of the recording and mixing sessions conducted by Alan Scholes for 'Mountain Fire', were an actor in the calculation of the song in construction. During mastering, CDs were part of the measurement of a key song quality, volume. Providing the ability to measure (along with the use of sound reproduction equipment) the quality of the song being produced against other songs already in circulation.

To support the use of CDs and sound files as referents inscribed with representations of the world, in this case, music and sound, they are listed and ranked, labelled and distributed in the form of charts and genre listings. These function as libraries, indexed and searchable collections that organise the available qualities in easy reach of users. As well as acting as a signalling device and means by which the world can be discussed, charts are the memory, a historical record that prevents sound representations from being lost in time and quantity. While the charts have been highlighted as aiding the concentration of sales on a small number of songs (Kretschmer et al., 1999) the transmission model of cultural production casts them as outputs, obscuring the way the charts and the songs they organise and codify, are enrolled in the organisation of music production and the construction of musical products.

CDs also carry information on what a song is in terms of its duration and arrangement. Their presence during the recording project is a way the identity of a song is fixed. They guide the songwriter, performer and producer, and A&R representative, establishing what features a song needs to include, if it is to be viewed as such. Sound carriers carry more than sound, they signal and help preserve the structural features of the song format, and are thus implicated in the fixing of music in product form. Recall producer/songwriter Martin Kato laying out the verse chorus arrangement choices, Nigel Harris describing how the song didn't feel right unless there was a 'kick-off' after about 20 seconds or Ned Gold using the timer in his music software to ensure his songs fit the prescribed duration. Sound carriers therefore play an important role in stabilising particular qualities of the music product, helping to enrol the production network in a defined song standard that helps consumers' evaluate the variety of competing products.

7.1.2 Credits as travelling agents

Textual credits, or acknowledgements of the role played by the various protagonists within the recording project, also function as circulating references. The way that credits circulate through the network enables those listed, such as engineers, session musicians, producers, artists, to demonstrate their value and participate in future projects. Their reach is extensive, printed on physical CD covers, carried on chart listings and collated by individuals or their management companies in the form of discographies. However, the ability to attach one's name to the released product varies and the way it does across the different participants, is both a reflection and an explanation of the unequal distribution of power within the network. The fact that outside the artist and producer, those involved in the project are irregularly and partially revealed has consequences on their ability to pursue their interests in future projects. Interviewee accounts and a survey of CD covers and other carriers of recording project details (music download websites, chart listings) conducted during this research, identified how studios and engineers can be removed from the project. This is significant, with implications that go beyond the irritation expressed by studio managers (e.g. Polly Apson).

One of the outcomes of immutable mobiles is the way they enable action from a distance. Credits, signalling contribution on a song, can thus be part of selection decisions of record companies and artists without the individuals or organisations concerned, being present. The studios, absented in this way from the initial project formation activities and decisions are thus rendered more passive, waiting for contact from the producer, and frequently invited to compete for participation. Evidence of their qualitative value in the form of credits on successful songs, is reduced, and they are more vulnerable to quantitative, price-based relations. Part of the answer to the question, why are large previously successful recording studios closing down, can thus be traced to their relative inability to circulate immutable mobiles that carry their voice and demonstrate their value.

The role of credits is also implicated in the preservation of an increasingly important ordering narrative within the music production network, the story of self-production or home (the artist's)

production. As Boje (2008) has noted, story can also function as a verb, helping construct relationships and roles. The story of being able to produce a song, without using a commercial studio, formed part of the negotiation between record companies and producers with studios. To paraphrase the exasperated studio owner, Henry Dane, *"What gets circulated, becomes true"*, the actual use of commercial studios during recording projects is a matter of assertion, not agreed record, as their participation in recording projects is not part of the credit system and therefore not part of the representation of the recorded song. Their lack of recognition reduces their ability to negotiate the use of their studio in their interests, and the view of a studio as a largely undifferentiated facility, substitutable by a home based recording set up, restricts their ability to determine how the studio is used during the project. Denied agency status in the production of sound qualities, studios are assessed within a different regime of calculation to that of the producer. Rather than a system of calculation involving the valued construction of particular sound qualities of the song, studios are assessed by cost based metrics. This highly quantifiable and comparable system of calculation enables and encourages price-based competition among the studio sector.

Immutable mobiles such as CDs and credits are mobilised by producers to help discipline the commercial recording studios and the artists during the recording project. Their usefulness is linked to the distance they travel around the network and their unchanging quality during their journey. Other references that circulate the recording network are not as immutable and mark a juncture in the network where the producer's agency is contested. This will be discussed later on in this chapter in Section 7.5. To continue the discussion of the actor-network that is popular music production, we will move onto considering the spaces of recording, and in Rose's terms, their "repertoires of conduct" (1996:144).

7.2 The studio as a disciplinary space

An important feature of actor-network theorising is the view of agency as a performed effect. The objective, when analysing areas of co-ordinated action such as production networks, is to identify how calculativeness is made possible, and what qualities form the metrics of the judgement involved (Callon, 1998; Callon and Law, 2005). We can view the studio, both in its home or project studio and commercial forms, as a centre of calculation performing an integral part of this metrological achievement. It is a space that can frame, or in other words allocates prescribed activities, confers roles, and is used to enrol artists in the performance of the producer's agency. A critical element to this translation of people, space and practice, lies in the way studios are used to separate artists from their music and the song, or in Callon's terms disentangled (1998:16).

In some ways the argument presented here builds on Hennion's paper on music producers and commercial studios (1989). I agree with his basic position that producers do not simply mediate between worlds of music or culture and economics and markets, their role is a more constructive one, of shaping production and consumption by establishing associative relations between them. But my research goes much further. This research has illustrated how these mutually formative connections are made and reproduced by providing empirical detail of studio operations, such as on the micro-spatial organisation of people and practice. A theme we will discuss in a moment. However it is not only the addition of empirical data that sets this research apart from Hennion's. A number of differences and extensions distinguish the argument put forward in this thesis. Aside from tracing the relations leading into the studio, considering the different tasks of recording sound production and mixing, and including the contribution of mastering studios, the main difference lies in the reconceptualisation of studios away from a purely physical manifestation and on the importance of sound in the reproblematisation of music production, the disciplining of artists and the construction and stabilisation of the music product. These themes will feature in the analysis that follows.

7.2.1 Studios as laboratories

Studios were described by one studio owner/producer as analogous to laboratories, a depiction also made by Hennion (1989). Their labelling of the studio as a laboratory was based on the way they saw studios as offering the conditions for controlled experimentation, a popularly attributed function of science laboratories. However we can expand the analogy further. They are a means of construction and assembly, a creation and sorting of the elements of music product into discrete components able to be changed and recombined until the desired mix is fused together to form the product. So at a general level, studios do indeed follow science laboratories and provide the means of separation, inspection and combination that enable the music to become a product. If we build in the insights of early work by Latour we can take the analogy still further (Latour and Woolgar, 1986, Latour, 1988). Studios, as with science laboratories, create qualities and systems of calculation that link the activities of production with those of consumption so that the difference between the laboratory and the world, in this case the studio and the act of broadcast, reproduction and consumption, is dissolved. If successful this achievement is clearly desirable as it addresses some of the fundamental concerns said to characterise cultural production, principally the danger of a gap between the systems of evaluation that inform production practices and the evaluative criteria used when consuming music and considering purchase.

But how is this gap dissolved? The mutual construction of production and consumption articulated? Hennion's proposal was through the producer taking up the role of the audience and in this way harmonising production and consumption (1983; 1989). This research has provided a finer grained, human/material account of the construction of the worlds of production and consumption, tracing the relations and movement of objects that constitute and perform the network. We have discussed how sound carriers are enrolled to organise music around the use of sound qualities, described in accounts of artists and producers as a key value in the success of a record due to its reproducibility. Sound qualities of songs in production can be identified with those of currently successful artists, providing something akin to the surrogate legitimacy described by early production of culture theorists (Adorno and Horkheimer, 1947). But how are

the artists interests aligned to support and produce this translation? Part of the answer can be traced to the analysis of songwriting in Section 3.1, where the use of song production software and equipment entwines the creation of music with considerations of sound treatment. We also saw how sound carriers and producer credits were used during pre-production meetings described in Section 3.2.3 to align the planned recording project towards the creation of sounds felt to be suitable for the bands' music and appropriate for the market. The studio is a key site for this translation of music production into a network of sound management. It is here that we can see how artists are enrolled and organised to perform the translation of their music into sound and in the conferment of discretionary power to the producer.

An important 'moment' in the translation of a diverse assembly of interests people and objects into an aligned actor-network is to problematise the situation, that is, to build agreement on what the problem is, and in so doing, agree on what is needed to solve it. In music production, one problematisation we have noted is the importance of sound to the success of music product. The established answer to this is the recruitment of a producer to organise the creation and application of a desired sound to an artist or group. However, in order for the producer to create and apply sound to the product, the artists need to disassemble their demo song into separate tracks that are performed and relayed to the producer and stored in his sound desk (Section 4.2). This requirement is explained by reference to a further problematisation, that of sound itself. For sound to be made sufficiently malleable for it to be changed from a natural phenomenon to a controlled product quality, it needs to be tamed, restricted and managed. To support this problematisation, the sound waves created by the artists are depicted as mutually hostile, with the potential if unchecked, to cancel, hide or change the overall sound of the artists' performance.

Following these problematisations, producers split up the artists, place them in booths and ask them to perform their section of the song. The objective is to obtain uncontaminated samples of sound, extracted from the messy condition in which they exist naturally. Artists are prevented from playing the song together by the danger that sound may leak or spillover into the microphones of the other artists. The result is, that to control and manage sound, artists are also

controlled and disciplined. In recording projects where the producer cited a preference for whole group recording, with the proviso that microphone placement and use of sound panels can reduce the amount of leakage, the need for accuracy often prevented this from happening. Artists were described as not being good enough to perform together as there are limitations to editing and adjustment when recording the whole band. Mistakes in performance (tune, rhythm) could not be fixed later and thus required high levels of accuracy and quality of performance (emotion). This can be read as a defence of the mechanics of tracked recording, that it is a necessity created by the poor musicianship of the artists, not a desire for control on the part of the producer. However the quality of accuracy is itself a construct produced by the sound inspection and editing machines available in the studio. Editing grid lines, timing clocks, and clickable sound waves, enable the performance of artists to be minutely inspected and compared, revealing deviations from the note or beat, and inviting the intervention of the producer. The ability to identify and to even retune/recalibrate vocals, or adjust the timing of instruments, is part of the creation of a quality of accuracy that is beyond that deliverable by a band of artists. Accuracy is a quality that is produced and as noted in Chapter 4 can only be relaxed (out of tempo or tune) if the producer declares it possible.

The spatial organisation of the studio analysed in Chapter 4 is based on this logic of separation, and has important consequences for the distribution of decision-making power within the recording project. As described, artists are physically isolated in a separate room, and watched over by the producer and engineer though an inspection window. Separated from the song as a whole, the artists are provided with headphones to filter what they hear and supplied only the sound needed to allow them to keep time and know where they are in the song. The disciplining of the artists is striking; enclosed in a sound proof room, peered at through a window and plugged into a selection of sound or a mechanical click. The producer meanwhile is in a space organised to increase their ability to analyse their performance, the music they are playing and the sound they are making. The spaces are sharply divided into performance and analysis. While the artists can hear their performance, it is through headphones that are not representative of the balance heard by the producer and can be adjusted to provide, not a representation of the sound they are making, but to encourage the required performance. Sitting in his ‘sweet spot’ in front

of flat response monitors and able to hear and measure the sound of the performance as it is being delivered and as it will sound once inserted into the rest of the song, the producer's ability to calculate and make decisions over the performance is enhanced over that afforded to the artist.

Of course the performer can, and does, come into the producer's control room to listen to the replay of the performance. There are, however, some aspects of the recording process that discourage this. There is the effect of role-defined boundaries. Listening to the performance requires the performer (who has, in the surveilled space, become transformed into that of the judged), moving into the producer's space, one of judgement. The switch of roles, from performer to judge is not of course impossible, the point I draw from accounts of the division of space within the recording studio, is that the division of space helps encourage a separation of roles, an effect that militates against easy role shifting. Additionally, the producer can quickly make changes in the time it takes to cross the boundary, preventing the performer from joining in the act of calculation and change. In this regard Roger Scope memorably described some producers as *"pro-tool ninjas"* with the ability to make lightening fast changes. Finally, the artist has less of an understanding of how the sound they make fits with other elements or sound effects the producer plans to add later. Recall Sonia and Simeon's shock at hearing the treated sound of a performance they had previously judged as poor (Section 4.4). It is also possible that the artist can regroup with the rest of his band and during the playback of the recording, exert authority over the producer. However, appeals of the producer, that parts of the song need to be assessed in terms of what he is going to do later (sound effects and editing) added to the reported (and experienced) difficulty of listening to numerous replays of recordings of sections of a song and the availability of table tennis, DVDs and computer games removes the artists from the space of decision making, the control room.

The spatial organisation of the studio is enrolled to enable/facilitate the construction of the calculativeness of the producer and the framing of artists as performers. It is a space of surveillance and self-surveillance, where, as with other physical environments such as offices,

retail malls and factories, the spatial arrangement, augmented by material objects (in this case monitors, and sound treated rooms), defines roles and distributes power.

7.3 Creativity and authenticity: performing producer power

The previous discussion of the physical structure of studios illustrates one of the strengths of an actor-network based analysis of organising, the inclusion of non-human actors in the explanation for human behaviour. One key finding of this research, identified in the analysis of studio practices, is the importance of sound waves to an understanding of the distribution of agency within the music production network. Our understanding of how popular music product is produced is impoverished if attention is restricted to the atomistic actions of individuals, the over-socialised depictions of structured agents, the operation of some imputed technological trajectory or the interplay of abstracted characteristics of market needs, artistic attitudes and capital power. By viewing agency as the outcome of the arrangement of a heterogeneous network of human and non-human actors, empirical insights into how power is distributed can be generated (Law, 1991; Latour, 2005).

My argument for the role of sound in organising music production is not meant in a reductive manner, sound does not drive the way music is produced, it is an actor, one of many (including, as identified the physical arrangement of studio space) that are enrolled to mobilise others to reach an outcome which in so doing benefits particular actors, in this analysis, the producers. The argument of this research is that music production is the outcome of a translation, an ordering of people and material objects around agreed standards, systems of calculation and the framing of practices and identities. In this way actor-networks are constructed that are repeated and outwardly stable looking and not riven with constantly competing interests from the different participants. Translation involves reproblematising the activities of those involved, designing practices that enrol people and objects into activities that mobilise or act at a distance on others in the network. Producers construct themselves as the obligatory passage point for this

translation, associated with the generation and calculation of sound through their management of the recording studio and sound recording materials and the circulation of recorded songs bearing their name. Two aspects of this performance of producer power concern the definitions and practices of creativity and authenticity.

7.3.1 Performing creativity

The circular, mutually constructive nature of the relationally achieved power of producers is illustrated in the depiction of creativity within the music production network highlighted in Chapter 4. The manner in which creativity was defined and therefore assigned to particular actions and points in the network reveals the way the network has been shaped in favour of the producers. Creativity in the recording project was applied to decisions over sound qualities, the nature and mix of sound waves to transform the sound of the artists. Creativity, as being the decision over sound qualities was not uncontested, with artists and record companies seeking to influence the decision at different points in the network. We will consider this struggle further into this chapter. At this point it is interesting to note, as Bourdieu argued (1993b), that creativity needs to be made, performed.

In popular music production, creativity, or the transformation of sound is realised by the use of tracked recording practices to decompose and capture the song as a series of separated tracks of each instrument in a clean form, containing no performance noises, spill from other instruments or sound treatments. As analysed in Section 4.3, sound recorded in this way can be manipulated by the producer. For when tracks, or artists, if performing together, are recorded with mixed sound waves, performance noise, or sound treatments, the degree of change possible by the producer is reduced, and the creativity of the producer constrained. Creativity is thus an outcome not an input. This is an important departure from existing treatments of cultural production networks. Rather than creativity being an essence, a naturally existing phenomena, unevenly distributed and thus explaining skewed returns or success, creativity is constructed by the organisation of artists, sound and space. It is thus possible to suggest that creativity is

achieved at the expense of the artists. Their performance is constrained and delivered according to the direction of the producer, so that the producer may be creative with the collection of tracks he obtains. To the suggested framing of space within the studio into one of performance and one of judgement (live room and control room) we can add an additional division of practice; between execution and creativity. The live room where the performer plays their music was described as an intimidating space where the avoidance of performance error was the principal organising narrative. Disciplined by red lights, click tracks, mix feeds, and isolated recording, the emphasis is placed on execution. The control room meanwhile is framed as a place of creative decision-making involving experimentation, change and combination.

Creativity involves more than the ability to change, the quality of changes made need to be recognised and accepted as creative. This is where a variation on the theme of enabling creativity through constraint, which was also present in descriptions of choices made in the control room by the producers, comes in. The structural features of songs were described as useful limitations preventing producers from being overwhelmed by choice. The verse, chorus arrangement of songs, and their limited duration, constrains the choices of the producer and enables, by identifying a range of options available, the management of change and experimentation. This disciplining of creativity was also evident in the use of genre constraints to guide and identify producer creativity. By identifying the prescriptions of sound treatments and instrumentation associated with particular genres, producers could plan their changes, as with William Wallby's use of a different drum sound than usually used on Dance music, and reveal, through the departure from the rules of the genre, the creativity of the change.

Though these relationships between constraint and creativity are different, in the former it is the constraint of performers and in the later it is the constraint of the rules of song form and genre music styles, the two cases draw on a common theme. That for creativity to be enabled, it must be limited either in the case of artist/producer relations by a division of roles, or in the matter of the producer song/genre relationships, by a limitation of degree. In both situations creativity requires some form of demarcation or in actor-network terms, framing. Creativity is achieved through the creation of particular, bounded, systems of calculation.

This view on creativity is especially useful when researching the creative industries and demonstrates the value of adopting a relational approach that eschews the use of a priori conceptualisations on the drivers for, or qualities of, human behaviour. If we work from the premise that creativity is an input to practice, there is a risk that we blackbox production relations, reducing our understanding to the reliance on an unknowable human property. With the creative industries this danger is all the more acute, as participants, as a way of establishing their identity and legitimacy can draw on the unknowable working of creativity theme and prevent reflection on their activities. Where the participants are disadvantaged within the network of relations (such as the commercial studios) the view that outcomes are subject to creativity dynamics and therefore difficult to organise, predict, and generate, is complicit in their reduced agency. Invoking the unpredictable workings of creativity blinds them from the way they have been enrolled in the generation and recognition of the very quality that distributes power to others in the network. They have, in actor-network terminology, become spokespersons for the current alignment of activities that support the interests of other actors.

7.3.2 Constructing the illusion of authenticity

Another theme in the literature on cultural production is the importance of authenticity as a quality of cultural products. Early theorists discussed cultural production in terms of the problem, through ubiquity and the act of reproduction, of the loss of the 'aura' of the original (Benjamin, 1936; Adorno and Horkheimer, 1947). Bourdieu (1996) described how products were 'consecrated' by the possessors of cultural capital, Peterson (1997) illustrated how record companies constructed authenticity during the promotion of artist and their work, and Negus (1999b) traced how record companies formalised the association of a music genre to a non-corporatised spirit of 'the street'. In each case, the value of cultural product was viewed in terms of the success, achieved during production, in preserving or creating the illusion of the work as one that is the result of cultural expression and not the organised outcome of market focussed companies. This research provides evidence of this organising quality, not at the expected promotional stages of production, as in Peterson's account, nor at the selection and

organisational level of Negus' examination, but during the construction of the work, the creation of musical product, the song.

As we saw in Section 5.3, one of the qualities used to assess the sound production activities of producers, was in the degree to which the sound was 'natural' or 'real' with producers describing how poor production was defined as the failure to create the illusion that the performance on the final recording was that of the artists, rather than the manipulated sound of a producer. It is important not to overstate this description of over-production or revealed production, as producers acknowledged that on some occasions, the creation of a sound far removed from what could be expected during unmediated performance, was permissible. Such as, for example, the use of exaggerated retuning of a vocal to produce a metallic sounding voice (Cher, and Kanye West for example). However this was the exception, and sound treatments and performances were generally moderated by how far they could go before it sounded artificial. There are two ways to apply this analysis to literature on the importance of authenticity during cultural production.

We may recall the way the demo recording was returned to, during the recording project to see what progress had been made, and importantly if anything had been 'lost' during the practices of track recording, editing and the manipulation and adjustment of the sound of the performances. Drawing on the somewhat hostile conditions of the studio and the decomposition of the artist's music into separate raw materials, we might suggest that music production involves the preservation of the aura of the original, in this case the demo recording, while constructing sound qualities suitable for market release. However, this line of reasoning is appropriate for the mediation model of cultural production, where products are created by mixing together the separate worlds of cultural practice and organisational and economic procedures and needs. As discussed, the assumptive conditions and the restrictive and self-reinforcing explanations that follow such a position are worth avoiding. An alternative reading of the depiction of music production as one involving the illusion of authenticity is preferred.

Namely, that the song does not have a point of origin with an accompanying essence derived from the unmanaged, authentic qualities of its original formulation. Rather, the song is an outcome, assembled and adjusted over the course of the production process by a number of agents (artists, engineers, producers, mixers, mastering engineers and A&R representatives). The insertion of various authentic attributes of performance (feedback, reverb, stereo panning, distortion) denied by the isolated and tracked nature of recording are not necessarily the attributes of live (simultaneous) recording, they are, more accurately, representations of it. Controlled and controllable versions of the qualities of live music recording. Even when actual live performance signifiers such as vocal pitch errors, audible breathing or musical mistakes are included in the final version of the song these are planned and calibrated, not allowed onto the end result without moderation. The song as an outcome, the result of calculation and assembly spread out over time and space, is, moreover, set in the experience of reproduction. The system of calculation that guides the construction of the song are reproduction based qualities and in this way cultural production is not about reinserting lost authenticity, it is concerned with the creation of authenticity during the production of the song, and maintenance of this quality during its reproduction and broadcast. We will pick up this link between production qualities and consumption practices in Section 7.6 of this chapter. First we will return to the studio and consider more deeply what it is.

7.4 The studio as organising narrative, not a building

This research into how musical product is made, was, in part, prompted by the closure of several long-established large studios. Events, which in popular narratives pointed to the end of the role of the studio recording a result of a technological shift that allowed all computer owners to be able to record. Indeed, Abbey Road, arguably the most famous of all studios, was put up for sale by its owner during the writing up of this thesis. Let's consider how what we have learnt about the way the music production network is organised, applies to the current, popularly reported, distress of large commercial studios.

Interviewee accounts of popular music recording projects described the use of commercial studios as one of disintegration as well as substitution, and thus the normative narrative was an exaggeration. Studios were used in short bursts, with the different tasks of the recording project, recording, editing, sound effects and mixing being distributed across a number of commercial studios and home studios of producers, or production rooms, rented spaces within studio complexes with treated walls and sound editing and mixing equipment. More contiguous use of studios, where the recording project used the facilities of one studio for all these tasks was still practiced, but studio owners saw a declining trend in this beginning to end use of the studio. Debates over the role of recording studios within music production have centred on this non-contiguous nature of recording projects and the transfer of tasks previously undertaken in a commercial studio to project or home studios of producers. Explanations for this often follow a techno-economic rationale, where the availability of lower cost production facilities and the reduced or flat revenues from record sales encourage such a transfer. While these conditions have some support, interviewees described the dramatic reduction in cost of digital audio workstations and studio managers estimated recording budgets to have halved over the last 10 years, this analysis is only part of the story. It doesn't follow that reduced company revenues necessarily translate into reduced recording budgets. Some producers identified the extra spend of record companies on mixing engineers, mastering engineers didn't report the same reductions in rates and record company spend on promotion has, according to data published by the BPI (British Phonographic Industry) (2009), increased. The economics of recording projects, while implicated in the change in use of studios, are only part of the explanation.

One of the distinguishing aspects of a relational approach to analysing organising is the rejection of a priori entities in favour of tracing interactions and flows of people and objects. The payoff of this approach when applied to music production, lies in viewing studios not as buildings containing a particular arrangement of materials and people, but as a technology, not a purely material one, but a set of practices, formalisations and relationships that are aligned in support of particular meanings (Haraway, 1991). Approached this way, the music production network continues to be one in which the studio is integral to the relational orderings of the materials and people that make it up. Popular techno-centric accounts of studio practice

therefore not only exaggerate the demise of studios but also miss the important point. The practices of tracked recording, isolated performers, editing, post-recording sound manipulation and the recomposition of the song during mixing are simply carried out in a more distributed fashion than 20 years ago. Indeed, it is precisely those features that enable the distribution of the studio outside the walls of commercial studios. The smaller sized project studios cannot accommodate whole performance organised recording, but can record one performer at a time. Separating the sound manipulation stage from the recording process (obtaining clean inputs to enable later manipulation) allied to the greater portability of digital music that doesn't require the realignment of tapes and mixing desks associated with analogue recording, enables the tasks to be carried out at different places. Furthermore, repeated recording of single instruments, together with the intense listening involved in editing, manipulating and mixing together many tracks, as we have seen in the analysis, discourages full, artist involvement. Hanging around playing table tennis is replaced by artists periodically visiting the studio to hear the progress made by the producer. The organising logic of studio recording practices is not a locationally centred one.

This is not to suggest that somehow the studio acts on its own to section out the recording project or transfer it to project studios. The argument presented here is that the practices and meanings formalised in the studio concept of recording are enrolled by producers to further their interests. By creating a home/project studio the producer extends his role within the recording project; they are now a producer-studio hybrid. Framed this way producers increase their bargaining power with studios and introduce greater flexibility to the projects they are involved with, allowing them to take on lower fee projects or manage a number of projects simultaneously. The sound recording and production equipment used in project studios varies, but are characterised by the use of lower cost digital audio workstations than those present in commercial studios. However, it is, as with the use of project studios in general, an oversimplification to apply a purely cost based calculative rationale to their use by producers. As identified in Section 5.3, digital equipment affords the producer greater degrees of manipulability, and as we have seen, creativity. Though studio practices involving analogue tape recording materials involved the manipulation and adjustment of the recordings, digital

equipment allowed such changes without degrading the original recording or introducing artefacts that would become audible on the final, mixed, song. The adoption of digital recording equipment is linked to the way they enable producers to increase their decision making power. So the fracturing of the recording studio and the adoption of digital audio workstations affordable and able to be installed in small home based or rented rooms is a case of aligning materials and studio practices to the interests of the producer. The reduced costs that result are a necessary, but not sufficient, element in enabling this modification of the organisation of music production.

Two additional points need to made at this point, one of qualification, and the other concerning prospects for a more fundamental change to the studio model of music production. The producer-studio hybrid is not a complete substitute for commercial recording studios. One system of calculation is not transportable or associable with that of the producer, irrespective of location, that of sound in space. Although, the characteristics of sound produced in particular spaces can be recreated with software, the ability to inspect, adjust and mix sound waves remains dependent on the space in which the decisions are attempted. The rooms of project studios, due to their small size and often parallel walls, affect sound and alter the audibility of different frequencies and thus of different tracks and instruments. This may impair the mixing decisions of producers and result in an unwanted final sound. Commercial studios and specialist mixing rooms with large carefully balanced rooms that enable producers to hear a more even and greater range of frequencies, thus retain an association with this important system of calculation and decision-making. It would appear then that commercial studios retain a non-substitutable quality. Interestingly, however, producers with project rooms felt that they could compensate for the affect of the rooms through their knowledge of the effect it has on particular frequencies. By checking how their mix played in a commercial studio, perhaps at a mixing studio or in a mastering studio, understanding of what their room did to sound is built up and the contribution of the commercial studio's well balanced room to organise sound waves is lessened. In this way the commercial studio, sound in space qualities notwithstanding, can be substituted by project studios.

The other point has to do with the possibilities for what Callon termed 'overflowing' (1998:16); where the framing of roles and the associated nature and organisation of decision making is not preserved and roles, practices and relations may be reconfigured. Although following the layout of a commercial studio with its sound proofed performance room (in this case a booth) and a control room with a mixing desk, the smaller space and more informal surroundings appear to have enabled the relaxation of role boundaries with consequences for the calculative powers of artists and producers. We now turn to a discussion of these points of reconfiguration within the music production network.

7.5 Everybody interferes: challenging the producer's control over sound

The argument thus far is that producers are an obligatory passage point of the music production network, a position attained through the framing of the recording project as a series of problems for which they are the answer. The key to this problematisation is that sound provides a transferable and reproducible quality with which to tackle the variety of music and the unpredictable market demand for it. In other words producers are positioned as a response to the 'nobody knows' narrative associated with cultural production (Caves, 2000:5). To enable producers to achieve the valued sound qualities of the musical product, artists are enrolled in practices that allow producers to manipulate and adjust the sound of their music. Producer power is achieved/performed by artists during the tracking recording activities of artist and sound isolation detailed in accounts of studio practice.

However, evidence of what can be described as convergence, aligned interests and practices and agreement over systems of calculation, doesn't mean that there are no rival ways of ordering the production network that contest the producer's position as obligatory passage point. There is, throughout the network, a struggle for authorship where power is realised as the ability to make or restrict the changes that can be made to the decisions taken during the creation of the music

product. The music production network can be described by who can change what, and when. It is this feature that suggests an additional motif to 'nobody knows' be used when explaining the organisation of cultural production, what producer Larry Jenkins described as *"everybody interferes"*.

We have seen how producers' use of studio spaces enables a disentanglement of the artists and their music from the sound of the song, in which the tracking and clean capture ordering narrative acts to produce the producer's ability, or creativity, to create and change that sound. What I want to focus on at this point is the way that this disentanglement of artists and their music from sound can be rejoined, and how the funders of the project, the record company, attempt to change the song to fit their judgement, when, or if, it clashes with that of the producer. To examine these points of contest, these struggles for agency, I will use concepts from actor-network theory introduced in Section 2.1 and 2.2, framing and overflowing (Callon; 1998) and irreversibility (Callon, 1991) or in Latour's terms, the mutability of circulating intermediaries (1987).

The argument of relationally performed agency, associated with the actor-network approach, is that regimes of calculation need to be constructed by framing or demarcating the scope and nature of decision making. By framing people and their relational associations with material, space, and practice, boundaries are established which perform agency, in this case, the producer's calculative agency over sound. The penetration of these boundaries, involves the overflowing of something across the frame's boundaries and the reconfiguration of relationships between those protagonists who are associated with it. Two such situations of overflowing were identified in this research, during the songwriting by artists, and through the operation of project studios. Other moments of network reconfiguration relate to the concepts of irreversibility and immutability, where the ability of actors to unpack and change the properties of the objects exchanged during the enactment of the network enables new practices and relational orderings to be constructed. The ability to act at a distance and enrol actors in the performance of the producer's agency is linked to the ability to create and circulate objects and in the case of music production, natural phenomena, without their qualities changing. If this stability of decisions

made by producers were not maintained, then the interests of other actors could be introduced, and producers' power, or agency and even their obligatory passage position within the network is threatened. In music production this most importantly applies to representations of sound, its visual representation in digital audio software and the decisions of the producer inscribed in sound files that are created during the recording project and finally transferred to the mastering engineer. First, let's illustrate the points of overflowing.

7.5.1 Overflowing

We saw in Section 3.1 how the enrolment of artists in the translation of music production into sound management, with the accompanying agency of the producer, was evident in the accounts of songwriting. The music of the artists was created in association with sound. This association extends beyond the published songs noted at the beginning of this chapter, and includes the use of sound recording and production equipment. Artists aiming for particular sounds followed studio tracking practices and recorded parts of the song and then began attempting to assign sound qualities to them. In this way artists begin the framing and construction of a calculative regime that is continued and reinforced during the recording project itself. However, although this is a case of action at a distance, the unmonitored use of sound recording and production software provides an opportunity for overflowing at a later stage in the recording project. This is because during use of the equipment, the artists grow in familiarity with the systems of sound production and the metrics of sound quality involved. This knowledge can be used during discussions of sound at the recording and production stage of the project. They, in effect, share understanding of the language of sound, and are able to use the codebook of the producer to translate metaphorical and lyrical descriptions of sound into quantifiable values and particular sound treatments. Though it is the producer's language that remains hegemonic, this shared use, to a limited extent, arguably dilutes producer power. The outcome of this overflowing is illustrated in the claim made by artists during the recording project that they have achieved producer status leading to their registration as co-producer on the song's credit profile. Such mid-project role shifts do not always affect the royalty breakdown agreed at the start of the

project. They are nevertheless important symbolic rights that through their circulation on published songs lessen producer power. Producers may retain their calculative agency through the separation of artists from the control room and the judgement of sound, the partial picture artists have of the emerging song, and their reputation as sound creator, however this overflowing does make the management of artists more challenging. While the traction gained by this overflowing varies, the movement of recording projects to home or project studios accelerates its effect.

As noted earlier in this chapter, the organisation of recording and people, associated with commercial studio practice, is retained during the use of project studios. Nevertheless, there is an informality to the project studio that breaks some of the separation and role definition between the artist as performer, and the producer as judge. The studio room is often inside someone's house and instead of a corridor lined by a gallery of high selling artists and framed gold and platinum records, the studio is reached by passing through a hallway lined with children's drawings (e.g. Ian Wood) or a kitchen (e.g. Keith Nemo, Larry Jenkins, and Owen Faulks). Some project studios are located in less domestic spaces such as studio complexes (e.g. Sykes, Jim Thomas and Jeremy Hope) or office blocks (e.g. Tony Poll, Harry Stammer, and Jo Berg). While there are fewer references to family life and general domesticity in these spaces, there is no large reception desk establishing the entrance to the boundary, and the space, owing to the extended time spent in it by the producer, is more personalised, *"it's like a living room"* (Jim Thomas) with living room style lamps, art, rugs and pictures.

These spaces are a world away from the red lights, heavy doors, banks of blinking lights and leather sofas of the commercial studio. The differences may appear trivial, but the presence of signifiers of domesticity and comfort rather than those of technology, power and prestige, contribute to the assemblage of human and material objects that inform and shape the practice or music production. This is illustrated by producers noting how artist performances could be improved by the more relaxed material space of the home/project studio. Though the flipside, and a clue to the overflowing of roles, lies in the comment by Martin Kato that he also needed

the formality and power of the commercial studio to *"intimidate"* the artist, *"to keep them on their toes"* and deliver a good performance.

It is not simply the informality of the project studio that can breach the framing of roles between the artist and the producer; it is also a question of scale. Project studios have observation windows into the dubbing room, but they are, due to their size, less intrusive, obvious, and noticeable. The producer's gaze is less commanding when cast through a small window in a door. Why not just open the door of the dubbing room and discuss and listen to the playback with the producer, rather than remain in the performance room awaiting the producer's judgement and instruction? This, allied to the lack of space in the dubbing room, has resulted in some producers using DI recording methods, with the performer playing in the control room, and the microphone in the sound proofed dubbing room. This is an interesting reconfiguration of disentanglement. The music and sound are separated from the performer and collected in the sound desk of the producer as with commercial studio practice, but in this case the performer is not enrolled in the performance of producer power. There is no division between performance and judgement; the performer can hear what the producer hears. In this way the artist joins the producer in the inspection and evaluation of the performance and sound.

A third aspect of overflowing associated and accelerated by the use of the project studio concerns the representation of sound. The recording desk and associated sound evaluation and production equipment are in the terminology of ANT, inscription devices, labelling and attaching values and measurements to sound and music. This, as illustrated in Sections 5.1 and 5.2, and discussed earlier in this chapter, is a necessary translation of the qualities of assessment and calculation of music into values shared by artists, A&R representatives and listeners, and are, importantly, ones that are controlled and managed by producers. However, a moment of overflowing is enabled by the way that digital software represents sound visually. These visual representations of sound, are enrolled by producers to discipline performers in terms of performance attributes such as timing and tunefulness. Two points can be drawn from this. Firstly, the introduction of digital accuracy (clickable levels of inspection that 'reveal' small deviations from the beat or note) can also be said to have enrolled producers as they offer a rival

to the producer's ears and judgement. Recall the concern producers expressed when making judgements that they continue to use their ears: *"If I hear it is wrong, then it's wrong and I don't care what the screen says"* (Owen Faulks) and *"I trust my ears"* (Charles Church). Here the use of accuracy is in the interests of sound equipment manufacturers, whose array of messages and signals on the sound qualities of the recorded music compete with the judgements of producers, challenging their power to decide on the quality of sound. It is relevant to recall that engineers were enrolled by the dials and meters to the extent that their role was defined by their ability to make the sound match the requirements of the equipment, *"I can get it to go green"* (Nigel Harris). Though producer agency involves longer and more extensive connections than those of the engineers, the danger of equipment defined sound calculations as opposed to producer based ones, and the accompanying reduction in power and value of producers, is evident.

The visual representation of sound also enables the subjective 'ear-based decisions' of the producer (sitting in the sweet spot of the control room) to be contested by more objective, sight-based judgments. The use of graphical representations of sound waves, as observed during the mixing session at Studio I, enables artists to have sight of the system of calculation and join in the assessment of sound qualities. The scene was a 'down tools' moment, with artists requesting sight of the sound wave, crowding round the screen and querying the producer. In home/project studios the small space brings artists closer to the screens of the producer. There is no distant sofa to anchor the artists, pool table to occupy them, or performance room to create barriers between them and the screen. It is important to stress that producers themselves did not articulate a tactic of separation; this is an analysis from a reading and observation of the relationships involved during the creation of music product. However even producers who made a point of stressing the importance of establishing good collaboration between themselves and artists and A&R representatives, also described their frustration with artists watching the screens and described how they would turn them off. Visual representations of sound challenge the 'golden ears' of the producer by providing manifestations of sound that can be pointed at, a rival source of authority and judgement that can be 'checked' by artists and A&R representatives.

The metrology of sound and its representation was also implicated in the 'volume wars' described in Section 6.3, another contest over the power of the producer's judgement. The production of a volume reading, an accessible number associated with the song was used by A&R representatives to value and compare the work of the producer with other songs circulating round the production/consumption network. As we recall during analysis of accounts describing the hand over of the mixdown recording of the song, and during the mastering stage, the judgements of producers and artists were replaced by a competition to increase the reading on the volume meter. Importantly the use of volume readings as a key sound quality appears at the end of the producer's management of the recording project. The transfer of the recording project to the mastering engineer sees the introduction of the A&R representatives ears, which, supported by quantifiable measurements, create a rival system of calculation to the producer's regime of sound effects and mix balance, volume. This system of calculation is strongly associated with listening behaviour of consumers, and the practice of broadcasting music, something we will discuss further on in this analysis. The point to make about the volume wars at this stage is to note the way that through representations of music, sound qualities can be shared among all the participants of the recording project. This enables artists, and in the case of the 'volume wars' (discussed in Chapter 6), the A&R representatives, to participate in the judgment of sound and assert their interests, in this case volume to distinguish the song from others available from websites and broadcast on the radio.

7.5.2 Reversibility

In addition to these moments of overflowing a further opportunity to contest the agency of the producer was identified in the mutability of the sound files they create during the recording project. For the actor-network, aligned in the interests of the producer, to be stable and confer discretionary power onto the producer's actions, the relations need to be constructed to enrol others in the creation and furtherance of their interests. We have seen how studio managers, the physical structure of the studio space, engineers, credits, sound carriers, and inscription devices (sound production and editing software) are all organised to support the producer's position as

obligatory passage point within the production network. We will continue to trace these performative relations when we look at the progress of the song to broadcasters and listeners and live performance. Before we do we need to discuss a punctualisation to this alignment, one that currently limits the producer's power and threatens their position as an obligatory passage point. Enrolling others requires, among other things (problematisation, and systems of calculation for example), the transfer of objects that carry the qualities and decisions made by the agent. Use of these objects, circulating intermediaries in actor-network terminology, requires the acceptance and agreement of the agent who created them. If, however, these objects, inscribed with the qualities and decisions of producers can be changed, adjusted to suit the interests of the receiver, then the reach of the producer is curtailed and their agency restricted.

The mixdown sent to the mastering engineer is a stereo file of all the tracks and thus restricts changes to the whole sound level not those of individual tracks within it. Much of what the producer decided and inscribed remains intact, and the intervention of the A&R representatives if they wish a higher decibel level to be created than the producer, are restricted to this one aspect of sound quality. However, accompanying this final mix are often a number of stem mixes of different instruments, vocal combinations and acoustic only versions of the recordings. These stems, as we saw in Section 6.1 and 6.2, enable changes to the mix of the song to be requested and made. The inclusion of stems enables the A&R representative to unpick the song, reveal the range of choices made and enable requests for the decisions of the producer to be reversed. Accounts from producers described this process as collaborative, though there was the suspicion that changes could be made without their consent. The transfer of all the recordings and stem files to the record company also enable the A&R representative handling the project to contract an additional mixer, a mixing engineer to carry out wholesale reverses and adjustments of the producer's work. The tracked recording practice and the clean capture of the performance of the music, while enabling the agency of the producer, also provide the source material from which to recreate or adjust the producer's work.

Use of mixing engineers did not appear to reduce the royalty or fee paid to the producer, which, as one producer pointed out, was rather unfair on the artist who ended up paying twice for the

production of the song. There is however the matter of control over the work. Producer contracts varied and were contingent on the reputation of the producer, however in all cases the ownership of the recordings passed to the record company funding the recording project (Fink, 1996; Bagehot and Kanaar, 1998). Producers described steps to protect their share of royalty and fee in the event of unsupported changes, or remixing of their work, and in one example inserted a clause enabling the removal of their name from any release containing unsupported changes to their production decisions. However, the ownership of the recordings ultimately resides with the record label who funds the recording project, so while producers may secure compensation for the use of their work on the song they were not always able to fully control how it was used.

The exchange of ownership rights for investment funds is a well-recognised and defining feature of the music industry (Bently, 2009). As described during Section 3.2. producers were described as having a sound, and in Section 5.2, as giving an artist her sound. As the producer's rights to reward for the creation of this sound only applies to sales of the object that contains it, the recorded song, the full value of this intellectual property is not, arguably, as the producer is paid a fee per track, captured by the producer. The live or broadcasted performance of the song, of which the sound is clearly an important quality, does not generate a return for the producer. With performance royalties making up the bulk of music industry financial returns, this omission is significant. The absence of the producer from a consideration of performance royalty is because performance copyright is based on the music, held as publisher rights, not the sound. While the notes are recognised by performance-based copyright, the sound effects and mix of tracks are not. This incomplete definition of a song is clearly to the disadvantage of the creator of sound, the producer. It represents a different case than the much discussed asymmetrical contracting relationships between the artist and record company. Here the concern is over the iniquitous exchange of copyrights for the financial resources needed to create and promote the work of the artist. Producer held intellectual copyright exchanges are however limited to the recorded product, they do not exist at the other levels of publishing and performance. This thesis has explored the way sound is enrolled by producers to obtain organisational control over the music production network. However, due to the formulation of

the music copyright regime this structural control is not connected to that of financial or intellectual property control.

A wider point on the limited nature of producer power over their intellectual property, the sound of the song, concerns the relationship between the artist and their sound. We are straying a little into musicological territory here, but the general observation can be made based on producer comments over 'giving an artist her sound', that, with few exceptions, artists retain a sonic signature that accompanies them through their career. Artists generally remain within particular genres and are associated with particular sounds, their lifetime value is therefore, in part, traceable to the sound developed in a studio by a particular producer. Artists' recognition of this was raised by producer managers when discussing the continued use of a particular producer by a band who had realised his importance. However, the use of a different producer is another moment of overflowing, as the new producer can analyse the sound they had previously made using their sound carriers and replicate many of the decisions of the former producer. The producer does of course, capture some of the value of the sound used by the artist, through the assertion of their moral right over the creation of their sound on particular songs expressed in the credit system discussed at the beginning of the chapter. These moral rights can be translated into financial return through increased bargaining power in future recording projects with different artists. It remains the case though that sound, and its use, may escape the control of the producer and be aligned to support the interests of the artist during the development of their career.

Producers, though translating the music production system into an actor-network aligned around the control and management of sound, have not enrolled the copyright system of calculation and distribution of financial returns. The distinction between organisational alignment and legal rights and the possibility that they become disengaged is worthy of future research. A study of intellectual property using an actor-network perspective is a promising research target, raising questions on the incomplete nature of contracting creative production that is a networked outcome, the translation of creative product into works that do not (or cannot) recognise forms of representation beyond those inscribed on paper (the musical score).

7.6 Action at a distance: ‘crappy speakers’ and live performance

Having noted the distinction between structural power and copyright power, we can continue to examine how producer power is performed by the actor-network. Producer power is a function of their ability to act at a distance, by mobilising sound to shape how it is consumed and performed in live concerts. The task is to enrol the listener and performer in the systems of calculation constructed and used during the creation of the music product. As we saw in the discussion of the studio as laboratory, this can be viewed as the achievement of making the world into a studio, in terms of how music is received, evaluated and reproduced.

We saw how the qualities of the song are formed and evaluated to construct and link production and consumption in the discussion of authenticity. The representations of authenticity generated by the producer shifts the quality from one associated with the conditions of performance to that of the perception from the listener’s point of hearing. Authentic is redefined as when something sounds real, not when it was real, in the sense that it was produced by unplanned aspects of performance. The argument provided by producers for the artificiality of such constructed authenticity is revealing. They describe the characteristics of sound waves as preventing the real, the sound of combined, simultaneous performance, from being able to be captured and reproduced for the consumer. The mix of competing sound waves produced by all the musicians playing the song together would clash, and, producers argue, obscure the individual reality of each instrument or performance. This is another way of saying that reality needs help if it is to survive the music production process, and is therefore a quality only achievable through the producer’s management of the recording process. In the process authenticity becomes a decision, or managed outcome of the producer, enabling it to be presented in calibrated amounts to the listener. The construction of consumption is also illustrated by the use of ‘crappy’ speakers, the quality of a song’s volume and the organisation of live performance.

7.6.1 Crappy speakers: representatives from the ‘outside’ world

Constructing authenticity is one way the ‘gap’ between production and consumption is managed, or more accurately, how production and consumption are mutually organised around shared qualities. Another example we saw in accounts of decision making during mixing and mastering is strikingly illustrated by the presence of ‘crappy’ speakers in the studio, both commercial and project, control rooms. The task of enrolment is not restricted to artists, for if the network is to be aligned the listeners need to be included in this performance of producer power. One way this is achieved, is by using speakers with limited sound reproduction quality as representatives of the outside world. A world of sound very different to the powerful and forensic sound reproduction equipment of the studio. They speak for the listener in her car, office or street, providing a standard against which the decisions of the studio can be evaluated. It brings to mind the image of a hoop, far smaller than the broad soundscape of the studio mixed song, through which the song is passed to reveal what fails to make it through. Changes are made and the song attempts to jump through, again and again, the process is repeated until the planned sound survives the leap and the qualities of the studio and the outside world are joined. The role of the ‘crappy speakers’ is a particularly appropriate illustration of the importance of approaching production from a relational perspective involving heterogeneous assemblages of people and materials. They are also a symbol of the contribution to understanding reached by following an empirical, practice based research method.

The ‘volume wars’ are a further indication of the attempt to enrol listeners in the production qualities of the studio and producer. Music players have sound control functionality, volume, bass and treble. Yet adjustment of these could result in the listener changing the sound qualities designed by the producer. Listeners can be better enrolled if they don’t touch the dials; they will then receive the music as it was planned in the studio. Mastering an album aims to adjust the different songs so that the listener doesn’t need to adjust the sound controls when songs change. However, when the consumer is listening to different artists such as when listening to the radio or when they use digital players to jump from song to song within their music collection, the

sound qualities of the songs will necessarily vary[7]. The connection is broken and the consumer may intervene and adjust the sound controls, thus changing the decisions the producer reached in the studio. The solution is to enhance one sound quality to stop the listener intervening in the sound qualities of the song, volume. The alleged pleasurable properties of high volume identified in the interviews can be used to prevent the listener seeking to adjust the sound. In this way the song becomes a true immutable mobile, carrying the qualities of the producer and conscripting agreement as to how to assess its quality.

While volume is a quality producers seek to inscribe on the song, there was the view discussed in Section 6.3 that volume had become competitive and in such cases damaged the sound qualities created by the producer. When describing these situations, producers protested that the volume wars could be avoided, if only the listeners exercised judgement, and turned up the song if they wished to hear it louder. That they didn't, explained in their view, the emergence of the volume wars and the consequent commercial failure of relatively quieter songs. We can thus infer, with some caution, that in this regard listeners have become enrolled in the systems of calculation established by the production network. That the producer's power and the stability of the song are achieved by enrolling the listener into acceptance of the sound qualities introduced in the studio. We have seen how producers have enrolled artists, studio owners, engineers, mastering engineers and to some extent the A&R representatives into practices that support their interests. In this instance we begin to see how producers act at a distance on the listener bringing them into the network of aligned practices and qualities. Consumer listening practices were not part of this research. This argument comes from descriptions of their behaviour from members of the recording project. Future research could be carried out to empirically examine the inferred degree of enrolment of consumers in the sound qualities around whose achievement the music production actor-network is organised. This could be structured around the different forms of consumption of music; via broadcast media, portable music players, home music systems, on-line streaming and listening for purchase, clubs and live concerts. It should also include a consideration of the use and design of music players, their

[7] It is relevant at this point to note that Pink Floyd successfully prevented their record company from selling single downloads of their songs.

sound controls for example and to investigate what at first sight appears to be a greater standardisation of equipment, (as compared to the Hi-fi equipment of the 1970s and 80's).

7.6.2 Conducting the performer: live reproduction of songs

Accounts of live performance practices provided by artists and producers in this study reveal the length of the producer's relations (action at a distance) throughout the music production and consumption network. Actor-network theory proposes that we view the power of an actor as a function of the length or the number of people and objects aligned in practices that produce or perform their agency (Callon and Latour, 1981). We have seen how artists, their music, studios, engineers, A&R representatives and mastering engineers are enrolled into systems of calculation and practices that support, though as the previous section discussed, not without contest, the discretionary power of the producer. When we consider the practice of live performance described in Section 6.4, further evidence of the convergence of the network around the management of sound and the decisions of the producer is revealed.

Problematising sound as something that prevents the recording project from being one involving the capture of the artist's performance, does not only shape the organisation of power between the artist and producer in the studio, but has consequences for the artist's reproduction of the song at live concerts and events. The recording project translates the song from a set of lyrics and musical score into a series of managed sounds organised across a number of tracks greater than the number of artists involved. Following this translation of the artist's music into the producer's sound, two requirements are placed upon the artists. Firstly, they now need to follow the sound prescriptions established during the recording project when performing on stage. Live sound engineers and mixing desks accordingly accompany the artists to the concerts, tasked with recalibrating the sound of the artists' instruments to the settings of the recorded song. The song has become a product, a fixed set of qualities not subject to the interpretation of the artists, merely its reproduction.

Secondly, the song contains more elements than can be simultaneously performed by the artists. Vocals and instruments have been layered, and different percussion and other instruments have been added. The song is now unplayable and the artists are provided with stem mixes of tracks to use as additional support, or backing tracks. The augmentation of the live performance with such extra tracks further constrains the artists. For in order for the backing tracks to work, the artists need to stick to the timings of verses and choruses established in the studio. The stems made by the producer thus enrol the artists in the reproduction of the song as fixed in the studio and carried on the CD or sound file. As the drummer determines the timing of the other artists, their alignment with the timing qualities of the stems is critical. This is achieved by providing the drummer with a click track (taken from the recorded song files) to guide them in replication of the timing of the recorded song. So along with the backing tracks, the drummer mobilises the artists to perform the song according to the qualities decided in the studio and inscribed on the sound carrier. The recreation of the song as established in the studio is further encouraged by the promotional nature of the live performance. The live tour is often timed and organised to support the sale of the recorded songs and deviation from the qualities established on the recorded song during live performance risks degrading the promotional effect.

In addition to these disciplinary relationships between the artists and the recorded song, the behaviour of sound, used during the recording project to organise artists, once again comes into play. The sound waves of the different instruments (and backing tracks) amplified to an audience, interact and prevent the performers on the stage from hearing the song and their own performance. Situated on the stage, a place of clashing frequencies, the artist's judgement of their performance requires the intervention of a live sound engineer. As in the studio, they are supplied a particular mix of the song, different from that of the final song or in this case that supplied to the audience. Stage monitors placed next to the performers (or earpieces) deliver a variation of the song that allows them to keep track of the progress of the other performers (especially the drummer) as well as to hear how they are performing. In this way their disentanglement from the music first carried out during the recording process is preserved and when backing tracks are included in the supplied mix their ability to make judgements and

decisions that may change the qualities of the song and by extension the decisions of the producer, is largely removed.

Live performance is thus disciplined by the producer from a distance and the song survives the transfer to the stage intact. There are potential overflows, however. Pat Stills recalled an occasion where the artists used the live performance as a studio and recorded a version of an instrument (using DI) that was later inserted in the recorded version of the song. The producer, absent from the stage based recording session, is, in this case, removed from discussions of sound quality and less able to organise the calculations and decision making involved. Though the sound recording limitations identified in Section 6.4 still operate, this use of DI recording on stage points to a juncture in the music production network where relationships maybe realigned. Even though this was the only example of such overflowing, and involved unusually powerful artists, it would be a mistake to dismiss this as an isolated and limited event. The roles of sound engineers during live performance is an interesting and relevant issue around which to base future research. The greater revenues generated from performance as opposed to those earned from the sales of sound carriers, suggests that the practice of live performance will become increasingly contested as interested parties (management companies, record companies, live studios) become more involved than hitherto. A future study could use the stage as the point from which to trace the relationships and circulation of people and objects in a similar way as this research has used the studio.

Conclusion: stabilising the network

This chapter has discussed the organisation of music production, conceptualising the network of connective relations as a heterogeneous assembly of actors, objects and physical space, aligned in practices organised to perform the agency of producers. We have discussed the role of sound carriers, credits, studio layouts, the properties of sound and the problematisation of the creation of musical product as one of sound management and construction. Using this problematisation

producers organise artists, studios and engineers in the assembly of musical and sound qualities according to their metrics of assessment and judgement. Principal among the qualities that frame the music production system of calculation is the quality of authenticity. Authenticity becomes in the process, a constructed outcome, an affect produced by the producer not a quality of origination. In this way producers are argued to occupy an obligatory passage point within the network. However this position is not without contest. We discussed points in the network's relationships where producer's decisions can be reversed and moments where overflowing occurs and rival ways of organising relationships are enabled. Finally, we looked at how the decisions of the producer continued to prevail during the reproduction of the song at live performances, even though they are no longer directly involved.

The objective set at the start of this research, to open the black box of product creation has revealed that musical product becomes a product through the creation and operation of an actor-network; a pattern of heterogeneous relations organised around the performance of particular outcomes and designated roles. The relations and human/material associations traced during this analysis, reveal how the musical object, the song, is achieved through networked action and organisation that stabilises the product qualities and systems of calculation throughout the production and reproduction process. The actors we observed are the effects of this ordering, and cannot be viewed separately from the networked relations that both perform and are performed by them (Rose, 1998). So for example, the agency and identity of the producers that we analysed is not presumed, but an outcome, indissociable from the activity of other participants in the network, human such as engineers and artists, material, such as studio rooms, recording equipment, or, as we have seen, natural, as in the case of sound. Participants which are themselves relationally constructed, such as in the case of sound that we illustrated was made by the network not as commonly presumed, captured. This empirical study has looked at the practices and interpretations involved in the operation of the popular music production network in a way never carried out before. In so doing it has realised what Calas and Smircich (1999) suggested was one of the benefits of using an actor-network perspective, the provision of an alternative explanation for human activity than that available in "conventional tales [of] organisation studies" (664).

The final chapter in this argument extends this conclusion by reflecting on the research process and outcomes, their significance for future research in the music industry and some implications for the wider study of cultural production.

Chapter 8

Approaches to studying cultural industries: Concluding reflections

Introduction

Theories and bodies of knowledge are themselves stabilised achievements; they frame problems, align interests, and through a system of calculation, proscribe and evaluate research activity. Such disciplining of researchers has the advantage of creating cumulative understanding, as research can build on previous work by observing the same or similar assumptions, and through the shared understanding of the systems of calculation (terms, problems, frames of reference, identities of protagonists, methods of appraisal, etc.) facilitate discussion. The disadvantage however, and one that initiated this research, is that they can privilege particular sites of activity and divert attention away from others. This was argued to be the case with music production, and actor-network reasoning was selected to approach its examination and explanation.

It is important then, to acknowledge that this research is itself disciplined by the framing devices, systems of calculation and terminological language of actor-network theory. The arguments and reasoning applied in this study of music production networks are accordingly not offered as *the* explanation for their organisation and character, but as one among a number of possible explanations. It is a question of starting points and the questions they can provoke. If we adopt a view of identity, agency and practice as being a performed outcome, if we begin with an irreducibly relational view of actors, objects and networks, what changes? What new questions arise? New explanations made available? The value of this research lies not in its

ability to replace existing treatments of cultural production, but in the new conceptualisations that result from adopting its perspective and method. Chapter 7 has analysed these new insights gained from the application of actor-network theorising and methodology to the study of music production. This shorter chapter will conclude this contribution, and reflect on the implications and recommendations for further study of cultural production networks.

8.1 Making the invisible visible

The challenge this research was designed to tackle was to reveal what had been largely concealed, how musical products were created. The depiction of music production as involving one of transmission, a model managed by record company organisations who selected artists and then through the use of distribution and promotional activities, connected them to a market of consumers had created a black box around the important practices, decisions, and relational arrangements that take place during the production of musical products. This gatekeeper model of cultural production as one made up of selection and funding decisions effectively obscured the practices of music product creation from view. As a consequence, explanations for how the music industry was organised suffered from stylised accounts of the operation of economic technological or social forces that risked slipping into clichéd accounts of art/commerce dualities, and produced explanations largely restricted to problematising issues connected to reproduction (distribution and consumption) rather than production.

Following this partiality, a number of interesting questions were either not raised or were selectively addressed. How are the numerous, highly distributed and temporarily associated production teams organised? Away from the administrative fiat inside organisations, how are the projects managed and controlled? This is especially interesting as their output, the song, maintains and has maintained for over 60 years, a quite fixed musical structure in terms of verse/chorus arrangements and song length. To propose that this question is answered by invoking the power of the contract or capital power is to focus attention of the final stop/go

decision, not the processes of product creation and people and material organisation and deployment. Also of interest, is how products carrying mainly symbolic value, can be constructed to operate within a mass reproduction market. Or in other words how is the seemingly diverse musical content and accompanying uncertain demand organised? Existing explanations stress the power of capital to persuade consumers of the merits of a latest release, and the importance of talent spotting to respond to changing musical tastes. A form of argumentation associated with the transmission model of cultural production. This again is partial, producing explanations based on difficult to verify and explore assumptions of individual talent and the ability of capital to manage consumer tastes. This thesis has shown that an alternative way of answering such questions and thus explaining the organisation of the music industry lies in the production of the product, the practices and relationships constructed to create recorded songs.

To address this omission and the explanatory gaps that followed, I conducted empirical research on the relationships and practices that constituted the recording project, with a particular focus on the studio as a key point within the flow of relationships, people and objects. 53 interviews totalling around 67 hours of interview material were carried out with the protagonists: producers, artists, studio owner/managers, engineers and managers. In addition 4 observation sessions were conducted covering different stages of studio practice from recording to mixing. By adopting a relational perspective to the examination of the accounts provided, it was possible to develop an explanation for the production of music product and its relationship to reproduction and consumption without recourse to abstracted organising templates of social, economic or technological macro forces. The picture that emerged during the analysis was of an actor-network of music production aligned around the interests of the producer who enrolled sound, materials, and physical space to discipline artists and attain power when negotiating with recording companies and studios. Producers had successfully positioned themselves as the answer to the ‘nobody knows’ problem and as we travelled through the stages of its construction insights into the producer's use of physical space, their representation and enrolment of sound, claims on creativity, construction of authenticity and control over the listening experience outside the studio were elaborated and analysed.

This explanation allowed for a reconceptualisation of the music production network as one that involved viewing the construction of the musical product as an achievement of the actor-network. Popular recorded songs are not, this study has argued, unproblematic entities, objects with pre-existing sets of qualities that could be configured to create a product. It was not simply an object within the music industry aimed at fulfilling the needs of consumers (e.g. Hennion, 1983), but more of a constructive actor shaping and enabling the operation of the popular music production network. It turned out that the creation of music product was not just the thing to be explained by this research, but the thing that also explained the configuration and practices of the popular music industry. With cultural products carrying symbolic value vulnerable to subjective assessments of quality and subject to uncertain creation practices, the music network was aligned around the creation of product qualities that could be measured, managed and valued by the participants in the production project and the market. The achievement of music production lies in the way it produces songs that are immutable, remaining unchanged during their reproduction, broadcast, replay on consumer owned machines and performance during live concerts. In this way they are suitable for mass reproduction. This is no ordinary accomplishment for it involves the disentanglement of the music from the artists who create it, and the fixing of its qualities in the face of the everybody interferes dynamic during the production process and across the different listening and reproduction environments and situations that follow its release as a product and its performance during live concerts.

8.2 Reflections on researching the popular music industry

This research has been about opening the black box of production, and in doing so I have realised the important contribution of identifying what the product is, what qualities it carries, to our ability to understand the organisation of a production system. What is striking is how long it took me to consider production and the product in this way. I have been involved in research on cultural production and especially the popular music industry for over 10 years. During this time I have theorised on fashion apparel production (Rieple and Gander, 2009),

written case studies on the music industry for classroom use, and conducted research into the organisation of the industry, writing papers using alliance theory (Gander and Rieple, 2002), transaction cost economics (Gander and Rieple, 2004) and the resource based view (Gander et al., 2007).

The point I wish to make is that I spent a considerable amount of time looking at the music industry, writing about record companies, arrangements with artists and the sales of songs without considering what these things were. I took them for granted, assuming their identity was not an issue, that their participation was a given and the task of explanation lay in explaining their interaction. The effect of this was that I also failed to truly consider the task of music product creation. I believed I was talking about music production, when actually I was merely referring to the coupling of artists with distribution and funding organisations. The production of the product went unanalysed. This omission was the result of a reluctance to look beyond assumed identities and a consequence of using macro-level abstractions to elaborate the interactions between them. It can also be attributed to the transmission model of the music industry that problematises production as a matter of artist selection and the application of organisational power over distribution and promotion.

Researching music production using insights and methodologies from actor-network theorising has taken the analysis towards an action based, relationally constructed explanation, rather than a structurally determined one. In so doing, the favoured grand narratives deployed in explanations of music production, of technology, organisational fiat (reinforced through contractual power) and economic cost based imperatives have been challenged. Technology was demonstrated to be a relational outcome not an immanent determining force. The normative view that technology, accompanied by the cost reducing effects of its use, shaped changes in the organisation of music production, was countered by the finding that the practices of music production continued, rather than changed, with the advent of digital equipment. That in fact, technology was enrolled by producers to further their interests and strengthen their ability to carry out the disciplining of the artists and the qualities of sound inscribed in the song as music product. Though the importance of considering project-based organising to examine music

production had been acknowledged in previous research, the project's status was viewed as one of a meeting point for the combination of wider structural forces, while organisations policed their operation through the use of fiat, accompanied by contractual power. This thesis has opposed this characterisation, demonstrating not only the constructed nature of the product qualities, roles, and practices that were carried out during the recording project and analysing how they extended beyond the walls of the studio to influence reproduction and consumption practices, but also showing how organisational power could be forestalled (admittedly after some struggle) by the producer's ability to act at a distance through their enrolment of sound. The argument presented in this thesis has thus provided another view, an alternative to the transmission model of music production, where the recording project is seen as a stage involving the combination of musical, financial and knowledge resources, before the action moves on to the concerns of distribution, reproduction and consumption. Instead I have offered an analysis of the recording project and the creation of musical product that demonstrates how production involves the construction of relational practices, roles and qualities that mutually form and align the network of production and consumption. Additionally, in a new insight, I found that musical product, the pop song, is not, as is commonly depicted an object to be diffused through the practices of production and consumption, but is a relationally achieved outcome that enables and constructs its organisation.

There are a number of studies that could be carried out to further strengthen the findings of this research. Popular music definitions are, as discussed in Section 1.6, controversial. Given this disagreement there may be some music writers who would argue that genres such as Rock, Rap or Dance Music display idiosyncrasies that resist the generalised approach to popular music taken in this study. I am unconvinced of the significance of these differences, nevertheless it would be still be interesting and worthwhile to repeat the study but limit it to a particular genre. The drawback of such a study would be the disadvantage of starting with assumptions as to the existence of genre based production and product differences that may warp the responses of the producers and engineers and studio owners who, I discovered in this work did not in the main, restrict themselves to particular genres. However a genre specific study of the production of musical product would at least resolve the possibility of the issue, and more positively could

reveal variations on qualities constructed and used to discipline the process, such as, for example, ways to construct authentic sounding performances.

This research used what was termed an oligopticon, a site from which to observe the whole, the recording studio. This was a response to the difficulty of knowing where in the network to stop following the actors (see Section 2.4 for a reminder of the rationale). Following this study I can see another point from which to observe the whole. Another site of flow through which actors, and objects pass, physical structures and systems of calculation operate, is the live stage. Though I did trace the practices of music production to the stage and identified it as a site where action at a distance occurs, actors are disciplined and the durability of the musical product is demonstrated, a study into the production of the live performance would be revealing. I expect the themes identified in this study to be confirmed, but a wider array of actors and objects included in a more site specific inquiry would provide greater detail on the actors enrolled by the song such as the live mixing engineer, stagehands, and tour promoters.

This research has drawn attention to the way practices and people within the popular music industry can be concealed behind the stylised economic, social or technological templates offered as guides for explanation and examination. A key implication of this research is therefore a methodological one: to approach the study of the popular music industry without using the predetermined entities such as organisations, products, actors or markets that accompany these macro-templates. It would be interesting, for example, to apply the same principles used to study the creation of musical product to the investigation of Artist and Repertoire practices and outcomes. The A&R task appears a particularly suitable point of focus for such a study. It is framed by the ‘nobody knows’ logic of organising in the same way as music production with the result that the task of artist scrutiny and evaluation, and the process of reaching agreement between the artists and record company is explained away in similar ways as the creation of musical product were. Decisions are explained by unproblematised references to the judgement, the ‘ears’ of A&R personnel, in the same way as the producer’s golden ears were used to account for record production decisions. If, following this study we view golden ears as a performed outcome, the result of aligned practices and actors, not an

input, then we should use the term as an indication of something being concealed and thus worthy of investigation. Furthermore, as with production, capital power is used to dismiss the problem of artist selection by proposing that large record companies simply sign up lots of artists to improve their chances of netting a winner. Again we have an explanation for why an area of activity doesn't require empirical study; wider economic forces are equipped to explain it. But if we reject these two concealing explanations as a starting position and follow a practice based method of tracing the relationships, actors, and systems of evaluation and decision making used during the scrutiny, evaluation and selection of artists, then we may make visible what has been concealed and produce alternative explanations for how the task is carried out and its contribution to the maintenance of the music production network.

8.3 Studying cultural production networks

This research can contribute to the study of other cultural industries in a number of ways, conceptual and methodological. One contribution involves the reconceptualisation of quality. Debates over quality in cultural industries are also shaped by the transmission model of cultural production. On the one hand, quality is treated as a synonym for financial value and determinations of quality are arrived at by counting sales in the market. This is a rather unfulfilling, circular way of looking at quality; quality products generate sales (short or long term), those products that generate sales are quality. On the other, quality, as with Bourdieu's restricted fields and Adorno and Horkheimer's formulation of cultural industry, is determined by opposition to market value and refer to judgements entwined in the high/low culture classifications that have more to do with social class and educational institutions than the object itself. This research traced how qualities or properties of the musical object (sound wave separation, authenticity, timing and tuning accuracy) were constructed and supportive systems of judgement created and enforced within and between production, reproduction and consumption. Rather than attempting to answer what quality is and getting trapped in the frames of the transmission model, it is more rewarding to conduct research on the question, how is

quality produced? Who speaks for these qualities? What attributes are used in systems of decision-making and evaluation? How is agreement on the importance of the selected qualities built and shared between production and consumption? These are very useful questions that if applied to research in the film, publishing and media broadcasting industries, have the potential to produce interesting insights into the organisation of production and consumption within their respective networks.

This research has also demonstrated the benefits of studying particular sites of activity within cultural production networks. Not in an exclusive manner where explanations for ordering, identity and power can be drawn from within the site, but one from where relational associations can be traced to form particular assemblies of people, language, materials and physical structures. These points of leverage, to use Latour's term (1983), are sites where participants and materials are disciplined, and inscribed with qualities that can travel round the network. These centres of calculation are present within the cultural industries and offer fertile ground for the research. For example, the film studio has clear parallels to that of the recording studio. It appears at first sight to be a laboratory where representations of the visual are constructed, managed and manipulated. Systems of calculation will be operating and assemblages of people, material objects and physical space will be aligned along particular practices. For example, the same process of disentanglement of the artists from the work appear, from distance, to match that of the recording industry. Actors have a similarly partial sight of the overall film, performing in front of blue screens, in scenes shot in non-contiguous order by people in positions that enable them to evaluate and assess the performance qualities of the scene. By tracing relational associations involved in the production of the film we could identify how and what qualities are produced and who speaks for them. If we carry over one of the themes of this research, the representation of sound and the way it is enrolled to discipline others in the network, to that of film, we can produce an explanation for agency and the distribution of power without relying on generalised depictions of social or economic forces. It will also be interesting to explain how agreement on the organising qualities of the film product is established and preserved between those 'inside' the studio and those outside, namely the distributers and consumers.

The view that the cultural industries "involve some form of creativity in their production" (Throsby, 2001:4) suffers, as the debates over the robustness of the term creative industries demonstrate, from difficulties involved in defining creativity. The present study proposes an alternative question, one that allows for a more empirical approach more satisfying than those based on the inferred operation of some assumed properties of individuals: How is creativity produced? In place of creativity as an input, an x-factor of production, turn, as with the matter of quality, the question around and see creativity as a performed outcome. A consequence of the disciplining of others who have competing claims to creative action in practices and relations that confer the means and grant the legitimacy to claim rights over creative decision making. We saw in the music industry how producers organised the performance of their creativity through the use of sound and physical space to discipline artists, and used representations of sound, for whom they spoke, to defend their decisions and frame creativity as a producer's task. A study of film production is likely to reveal similar disciplinary relations and performative framing of creative agency.

This approach to the study of creativity is particularly valuable in the cultural industries where the 'everybody interferes' dynamic identified in the music industry has consequences for our understanding of the management of production projects. Unchecked, the ability to adjust and reverse previously made decisions threatens the stability of the various roles within the project and risks collapsing the production project under the burden of role conflict that can follow. How then are roles stabilised, product qualities inscribed and agreed? In the film and broadcasting sectors, as with the music industry, this is likely to be achieved by constructing representations of the actors' performances accompanied by a system of calculation to evaluate them. Tracing the relational practices and particular human-material assemblies involved in constructing the production network would reveal how projects and the products that result are stabilised, and how power among the various protagonists was distributed.

Finally, the symbolic value of cultural products makes the study of how products are created in forms and bundles of qualities suitable for mass reproduction all the more pertinent. It is simplistic to portray functional products as being subject to practical requirements that reduce

the variability of product characteristics. Furthermore, the culturalisation of economic life view has identified the increased importance of symbolic value to such functionally proscribed products. However, that said, it remains the case that products whose value and attributes are meaning based, are less constrained by functional requirements. Without recourse to functionally understood attributes and associated production practices, cultural products designed for mass reproduction have to be organised into stable, reproducible objects containing agreed qualities that can be evaluated during market exchange (Callon and Muniesa, 2005). Under these conditions the production and mass reproduction of cultural products is a considerable achievement. It is important therefore not to take the products of the cultural industry for granted, to accord the song, film, book, some kind of immanent status. For if we do, we remove from view important practices of production that explain not just how products are inscribed with particular qualities, and thus produced, but how those qualities are enrolled to support the agency or power of particular roles within the network and aligned to enable mass reproduction and consumption activities to take place. Approaching the study of cultural production by tracing how products such as music, film and books are formed and stabilised during production enables the researcher, as this study has demonstrated, to explain how production networks and consumption markets are organised around the production and consumption of symbolic goods.

Conclusion

The argument presented in this thesis has involved demonstrating the benefits of approaching the investigation of production networks from a relational perspective, where products, organisations, agency, and actors are all effects of the aligned practices that make up the network, not the origin of them. This perspective has wide ranging application for the study of cultural production as well as offering alternative ways of analysing organisations and organising in general. I have for example, begun to explore the contribution of viewing power as a performed effect can make to the study of industrial organisation and competition (Gander,

2010). Assessing how industry participants are disciplined into behaviours that construct the power exerted over them equips the researcher with an alternative way of examining the structural features of industries as well as points at which reorganisation may occur. More particularly, the benefits of problematising the product, identifying the construction of product qualities that enrol protagonists in practices that benefit particular roles or identities, can also apply to forms of organising beyond that of cultural production.

One of the challenges to reconceptualising how production networks are organised stems from the unproblematic appearance of established systems of organisation. Central to this achievement is the role played by product qualities in the operation of the systems of calculation and distribution of power that characterise the production network. To appear legitimate, product and process qualities and the way they are measured must "pass themselves off as being about an independent reality; they must appear natural" (Power, 2004:776). This is the critical point. Once qualities are aligned in systems of calculation and practice, the network takes on a self-justifying character, concealing the practices of construction behind laws or logics of markets, organisations, technology, and individual, rational agents. Thus in this study, we saw how sound was used by producers to organise production around their interests, discipline artists, restrict record management influence and create a product from music. More accurately it is through particular representations of sound and its qualities, that the producer disciplines others and organises the performance of their agency. So the questions to base research on production networks are: What qualities are being represented? Who speaks for them and how are others disciplined by their acceptance of them?

Reflecting on the experience of conducting this study, the substance of the analysis comes down to one of not accepting the a priori erection of boundaries, boundaries between the economic and social worlds, between art and commerce, people and objects, organisations and the industry, actors and action, products and production networks and production and consumption. These boundaries portray the problem of understanding organised and organising human activity as one of reconciling or mediating between various entities and forces. The problem is that explanations in this spirit never escape their foundational assumptions and analysis of their

interaction rest on macro level explanations far removed from the action. As a consequence some practices and relational orderings may be hidden behind stylised economic or social templates, or bundled inside unproblematised entities such as products, organisations, actors, or markets. Cultural production, more specifically the creation of musical product was one such victim of the concealing effects of a priori boundaries. In response, this research has sought to render visible the interesting and constructive relational performances involved in the construction of musical product, and in so doing re-conceptualise how the music production network is aligned with the practices of mass reproduction and consumption.

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Interviews and Studio Session Observations

Interviewee List

Interviewee Details

1. Smith, Joan (Studio Manager)

Bio: Joan started in the music industry in the early 1980s as a receptionist at a major London recording studio. Following this experience she began to work in A&R, becoming involved in the booking of studios and the management of recording budgets. She then switched roles and began to manage studios in London, before taking up her current role as manager of a very well established London recording studio. The studio has four live rooms and a number of mix/production rooms rented out long term to bands and producers.

Date: 7/08/08
Location: Studio K, London.
Duration: 0:42 hrs

Contribution to theoretical insights: Account of the studio's strategies, disaggregation of the recording network, the role of space in constructing musical product, and the representation of sound, design of studios, and interaction with producers and record companies (reputation, virtual credits, contract design, rate negotiation).

Supported proposition(s): 4.

2. Sykes, Bill (Producer, Mixer, Engineer)

Bio: Bill is an extremely experienced producer and engineer, who has worked at the most famous recording studios in London, becoming chief engineer at one of them. Freelance for the last 18 years he has moved into production. He has extensive experience having worked and continuing to work with a long list of artists from within a range of musical genres.

Date: 18/12/07
Location: Project studio in Studio C, London.
Duration: 0:58 *hrs*

Contribution to theoretical insights: Studio as a collection of resources, apprenticeships acting to discipline interpretation of sound quality. Disaggregation of the recording network and the portability and reversibility of producer decisions.

Supported proposition(s): 1, 4.

3. Stammer, Harry (Engineer, Mixing and Mastering, Producer)

Bio: Harry began his career in the late 1970s as an assistant engineer at a London recording studio before going on to be chief engineer at another very well known London studio. He is currently freelance. A very experienced producer Harry has worked with a very long and varied list of international artists spanning a wide variety of genres and musical styles.

Date: 8/05/09
Location: Studio L in Brighton. Production room (4m/6m) with a Digital Audio Workstation (Pro Tools HD), various outboard equipment and microphones.
Duration: 1:32 *hrs*

Contribution to theoretical insights: Studio apprenticeship and the disciplining of interpretations of sound quality and established recording practice. The multiple roles of engineer and producer and the translation of music into tracks where sound judgements can be made. Accounts of decision making in the studio and differences in analogue recording practice and digital. The disciplining of listener judgements, and different sound qualities. Producers as able to construct authenticity to enable the simulacra to be accepted by listeners. The reversibility of decisions made by producers. The enrolment of the live performance by the studio.

Supported proposition(s): 1, 2, 3, 4, 5.

4. Dane, Henry (Artist manager, Studio Owner)

Bio: A very influential member of the UK music industry, Henry started out as a tour manager for some of the Supergroups of the late 1970's. He then moved into artist management before established Studio C, an influential and successful studio and club complex. He has served on boards of music industry bodies and has expanded the range of support businesses within the Studio C group such as equipment hire, and producer management and recently purchased another large, commercial studio.

Date: 17/07/08
Location: Studio C studios, London
Duration: 1:30 *hrs*

Contribution to theoretical insights: Studio strategies, price taking, renting long term to producers. Dry-hire critique (rooms without studio personnel support) suggesting the relational identity of a studio. Studio as a centre of calculation supported by sonic expertise. Enrolment of studios by manufacturers. Use of the 'recorded in a bedroom story' as a negotiating tool with studios, an organising discourse that is not necessarily factual or accurate. Change in APRS

attitude towards one of service facility provider accompanied by the increasing presence of manufacturers on the board. Disaggregation of the recording network.

Supported proposition(s): 1, 4.

5. Stills, Pat (Engineer, Producer)

Bio: Pat is in his mid 40's. He began as an assistant engineer at well-known London recording studio working up to being in-house engineer. Here he engineered a long list of international artists. After leaving to go freelance, Pat started to do more production and mixing work with a range of internationally successful artists. He has worked in studios all over the world and supports his mixing work with a home studio.

Date: 3/07/08
Location: Kingston University, London
Duration: 1:20 *hrs*

Contribution to theoretical insights: Distributed nature of the recording network; role of reputation, and other recorded music as circulating references. Accounts of the reversibility and irreversibility of decisions taken by the producer (stems). Tracking approach to organising and disciplining musicians and music, and the management of decisions and quality judgements within the studio. The producer's ownership and discipline of sound in and outside of the studio. Contribution of the materials of the studio (rooms/equipment) to the decisions and organising of the process. Studio as a laboratory that transforms 'natural' sound into the structured format of a musical product.

Supported proposition(s): 1, 2, 3, 4, 5.

6. Jones, Adam (Owner of Producer, Artist, Record Publishing and Event Management Group)

Bio: Adam is in his late 40's. He has a varied career to date starting in the music industry as a roadie before moving into record label management and finally artist management in the late 1980s. His artist management company is perhaps the largest artist and producer management

group in the UK and is also involved in a diverse range of music related activities including publishing, promotion and live music. He is strongly associated with the development of music management within the UK. He negotiates label contracts with artists, manages recording projects for producers and artists and promotes live events.

Date: 08/07/08
Location: Adam Jones Management offices, London
Duration: 0:52 *hrs*

Contribution to theoretical insights: Accounts and interpretations on the roles of the participants: studios, artists, producers. Organisation of the network around the decisions of the producer and the accompanying enrolment of the studio as a facility to be selectively used rather than an agent able to organise others. Accounts of contractual negotiations within a flexible specialised network where the value of the final outcome is highly uncertain and varied. The importance of circulating references such as producer credits and previously produced work.

Supported proposition(s): 2, 3.

7. Poll Tony (Writer, Producer, Mixer, Re-mixer)

Bio: Tony, who works under the artist name Poll, is in his late 30's. He is a producer and engineer with a Mercury prize-winning act, major R&B artists, Hip-hop acts, as well as Pop acts. He has also re-mixed work for a range of Pop bands and artists.

Date: 14/4/08
Location: Home Studio, London. Small room with a vocal booth to one side separated by glass. Pro Tools rig and banks of effects processors and samplers. Low slung sofa.
Duration: 1:30 *hrs*

Contribution to theoretical insights: Studio as a site that establishes set practices and through apprenticeship approach acts as a spokesperson for the producer. Account of the recording project as an actant. The importance of circulating references, credits and other songs. The disciplining of musical taste through producing songs to a structured format and sound characteristic; enabling them to become a separate object able to be distributed and exchanged.

Multiple roles of producers and engineers. Studio as a site supporting the decisions of producers by a disentanglement of the artist and their music, a separation allowing for calculations on the qualities of the product to be made. Accounts of the reversibility of those decisions by other producers, mixing engineers or record companies. Distributed nature of the recording network. The re-interpretation of recording quality by users listening on low-grade equipment (iPods/ phones).

Supported proposition(s): 1, 2, 3, 4.

8. Daniels, James (Producer, Engineer, Composer)

Bio: James studied for the Tonemeister Masters Degree at Surrey University one of the first music technology courses in the UK. James then joined a post-punk Pop band. They were signed up to Warner Electrica and Atlantic (WEA) and had two UK hit singles, toured, performed on Top of the Pops and began recording an album at Air and Olympic Studios. Two years later the band split up, citing dissatisfaction with their record label and internal disputes among the band. After establishing a small studio, James began a publishing contract with Island Records and Universal Music, writing songs for Pop acts. In 1984 he formed a music and contemporary dance act and signed to Sony Records. He toured and recorded music with the act before turning his interests to co-writing for independent dance labels and artists. James has gradually moved into music composition for TV programmes and Film studios and has had work commissioned by The Royal Opera House and the English National Ballet.

Date: 30/11/08
Location: Kingston University, London.
Duration: 1:26 *hrs*

Contribution to theoretical insights: Accounts of performing, artist record company relationships. Descriptions of the translation of music into sound and the disciplining of artists and their music necessary to archive it. Use of technology to enrol artists in the practices of music into sound translation. Accounts of multitrack recording practices and editing that enable

the disentanglement of artists and their music. Recorded music as a simulacrum, in this case of the live music. The disciplining of the listening experience.

Supported proposition(s): 2, 3, 5.

9. Johns, Sally (Producer Manager)

Bio: Sally began in artist management in 1989, working for a variety of different companies before setting up Sun Management, an artist and producer management group in 1993. The company has a roster of around 16 top producers, providing management support for producers before, during and after the recording project, including pitching for work, contract negotiations and compliance.

Date: 14/12/08
Location: Sun Management offices, London.
Duration: 1:06 *hrs*

Contribution to theoretical insights: Importance of the producer credit as a circulating reference and how this contested. Producer managers act as agents for the producers, operating as a bank, lawyer, marketing representative and advisor (on project termination). Descriptions of the chain of decisions during the formation and performance of the project and the power of the producer in the selection and use of the studio to reinforce their decision making power. The distributed and flexible nature of the recording network enabling certain decisions taken in the studio to be contested.

Supported proposition(s): 1, 3, 4, 5.

10. Danton, Cathy (Record Label Manager, Joint founder)

Bio: Cathy was in her mid-20's when I interviewed her. She began her career in the music industry by working in record shops, followed by distributers and then briefly managing recording studios before setting up a record label, 'Custom' in 1997. Cathy managed the artists,

marketing and supervised the recording projects. The label signed a distribution arrangement with Frisk records for European distribution. The label closed in 2002.

Location: Custom offices, London.
Date: I interviewed Cathy for a previous project on the music industry on 1/11/00
Duration: 1:03 *hrs*

Contribution to theoretical insights: Attitudes of record companies to A&R representatives and the source of the dummy studio knob story that I followed up in this study.

Supported propositions: None, as the interview was designed to examine inter-organisational relations between record companies.

11. Simons, Tim (Studio Manager, Producer)

Bio: Tim is in his early 30's. He is currently General Manager of Studio M, responsible for organising the recording projects of major recording labels and smaller UK independents. He has worked in this capacity with both major artists and hopeful newcomers. As a producer Tim has recorded and mixed songs for Dance music compilations.

Date: 5/12/08
Location: Studio M, London. The studio is a rebuild of the original Studio M that had previously been located in another part of London, and is made up two live recording studio rooms, comprehensive equipment and instrument list and a number of production rooms rented out to producers.
Duration: 1:00 *hrs*

Contribution to theoretical insights: Account of the multitrack approach to recording how this process is one of separation, examination and manipulation. How sound is an actor. How the studio and equipment and producer discipline the artist into this disentangling and translational set of practices. The disaggregation of the recording network and the reversibility of some of the decisions taken by the producer. Studio as a facility, a resource that acts in ways to support the interests of the producer. Studio as a knowledge and contact point that disciplines sound, engineers and artists. Description of the decisions taken by the producer to translate music into sound and their reversibility. Disciplining of the listener. Account of the studio's strategies.

Supported proposition(s): 1, 2, 3, 4.

12. Bones, Andrew (Broadcast Engineer, Recording Engineer, Mastering, Artist, Audio Equipment Maker)

Bio: Andrew is in his early 40's. After taking a music technology course Andrew started as an assistant at various studios in London and Brighton in the late 1980s and early 1990s. In 1996 he joined the BBC as a recording engineer and then moved to broadcast engineer at London Control Room in Broadcasting House. This is the studio that prepares the transmissions from the studio, for example a Radio 1 studio, before it is broadcast to the UK. Andrew also set up a production amp manufacturer and specialist vintage amp and instrument repair shop in London. He plays in a number of bands.

Date: 26/08/07
Location: University of East London, Royal Docks, London.
Duration: 2:04 *hrs*

Contribution to theoretical insights: Studios enrolled by music manufacturers as service facilities. The characteristics of sound and the qualities by which it is measured and manipulated (disciplined). How studios and studio equipment enable the inspection and treatment of sound. The fixing of sound qualities in the studio for the different broadcast and replaying environments of the listener.

Supported proposition(s): 1.

13. Ham, Christopher and Foster, Howard (Founders of Minimum Noise)

Bio: Christopher and Howard are in their late 20's. They are management consultants with technology and media firms based in Copenhagen, Denmark. They set up their firm in 2007 inspired by the crowd sourcing and social networking practices of other Internet sites (e.g. Remix). The proposition is that musicians upload tracks or basic riffs and offer them for sale or alternatively musicians and producers make requests for particular tracks such as some beats or

a vocal track setting a price they are willing to pay. MP3 files are used for selection and once agreed, higher quality audio files are exchanged.

Date: 25/09/08
Location: Cafe in Central Copenhagen, Denmark.
Duration: 1:14 *hrs*

Contribution to theoretical insights: The reversibility of music performance and production decisions and the disaggregation of the recording process. Their initiative and the discussion stressed the view that songs were assembled not performed.

Supported proposition(s): 4, 5.

14. Troy, Alexis (Producer Manager)

Bio: Late 30's. Alexis is the owner of Star Management, an artist and producer management company. The company represents established and up and coming producers and artists. Alexis negotiates producer contracts with record labels and terms of use of studios to initiate the recording project and support the producer in assembling the resources to be used on the project. Establishing a recording project with one of their clients can involve conducting A&R activity on bands and artists to identify suitable projects, monitoring the signing of artists to a record label and following up with a pitch of their producer's skills or ensuring the best deal for producers that have been approached by record labels or artists.

Date: 25/07/08
Location: Star Management offices, London.
Duration: 1:08 *hrs*

Contribution to theoretical insights: Interpretations of the producer's role as an obligatory passage point, which, using the studio, translates the music into a desired sound. The role of circulating references such as credits, reputation, royalties and songs. Initiating the project, negotiating contracts and selecting resources in a flexibly specialised manner. The disaggregated nature of the recording process and the enrolment of studios. Multitrack recording as disentanglement of artists from their music a prelude to the translation of music into sound.

Account of the reasons for producer's starting project studios and commercial studio's responses. The use of sound qualities during the selection of the producer.

Supported proposition(s): 3, 4.

15. Williams, Nathan (Studio Manager, Owner)

Bio: Late 40's. Worked in studios as engineer until 1995 when he built Studio Q. Owner and co-manager he negotiates with record labels and artists and producers on use of the studios, organises the in-house engineers and maintains the equipment.

Date: 10/02/09
Location: Studio Q, London. The studio is a commercial recording studio with residential facilities. It has a Neve tracking room, an SSL mix room and a couple of production rooms that are rented out to producers on 6-month leases.
Duration: 1:10 *hrs*

Contribution to theoretical insights: Studio as a place that disciplines sound and allows decisions to be made over its treatment. Studio strategies, loss of agency and enrolment as a service facility.

Supported proposition(s): 1.

16. Hope, Jeremy (Composer, Artist)

Bio: Jeremy is in his late 40's. A classically trained composer and musician he was at the time of interview playing keyboard as a session musician for a major international band. His work encompasses composing and conducting recordings of film and TV scores and string arrangements for Pop bands. He also produces albums for compilation CDs such as the Now This is Music series. He has worked in many recording studios in London.

Date: 24/06/09
Location: Studio R, London. Jeremy's production room has a mixing desk and keyboards, effects processors and a vocal booth. The production studio is part of a very extensively equipped studio complex with live rooms and control rooms.

Duration: 2:02 *hrs*

Contribution to theoretical insights: Accounts of the decisions made over sound and the organisation of the sound qualities of each tracked instrument. The way studios enable the examination of the elements of a song and facilitate their movement around the song. Practices of multitrack recording that disentangle the musician from the music and construct a sound beyond that which a performer could deliver. That the sound of an instrument or track can interfere with other sounds on other tracks. They need to be assembled spatially in order to preserve their identity, which requires careful mixing. How then sound can be viewed as an actor. Structural standards of the song in terms of arrangement, length and the listener. The importance of circulating references such as other sounds of songs. Classification of recording based on group performance and collective discussions as traditional and less often seen. The distributed nature of recording. The contribution of artist performance to the song and the way tracks can be edited and treated to replace the performance. The relationship between sound and space and the role of studios in the creation of representations of sound.

Supported proposition(s): 1, 2, 3, 4, 5.

17. Lane, Patrick (Studio Manager, Engineer)

Bio: Patrick is a very experienced engineer and studio manager. He began his career as an assistant engineer (tape operator) at a well-established London recording studio. Here he recorded major international artists during the 1970s. In 1981 he joined another London studio working there for 20 years becoming chief engineer and then its general manager. In 2000 the studio closed and Patrick started up his own studio. The studio has one very large live room, a separate recording booth, a mixing room and control room with a Neve console.

Date: 2/10/08
Location: Studio S, London.
Duration: 1:30 *hrs*

Contribution to theoretical insights: The enrolment of studios as service facilities. Accounts of analogue equipment and practices that help illustrate current practice and attitudes. Rival views

on sound quality and performance quality. The disentanglement of artists from their performance and the spatial discipline of the recording studio and control room; isolation and control. The relationship between sound and space and the value of that space.

Supported proposition(s): 1.

18. Coe, Jonathan (Record label owner)

Bio: Jonathan is in his early 50's. He has worked for major record labels and independents as a marketing manager promoting artists and overseeing publicity and distribution tasks. In 1998 he set up an independent label specialising in electronic music. He currently manages around 12 artists.

Location: Cafe in London
Date: 7/12/09
Duration: 1:20 *hrs*

Contribution to theoretical insights: Reasons why there is a degree of irreversibility of the decisions made in the recording studio and mix room. The oversupply of musical product. The structure of song standards and disciplining the listener. Accounts of mastering practices and role in the construction of a commoditised recording. Description of project studios as functionally equivalent to commercial studios signalling the degree to which the studios' contribution has been aligned with those of the record companies and producers. The disciplining of the listener and how the alternative forms of distribution enrol the artists.

Supported proposition(s): 4

19. Cheyne, Ron (Record Label Manager/Owner)

Bio: Early 40's. Ron is a record label owner and manager. He has set up two record labels, one aimed at developing Asian and World music and the other focussing on Urban music. Both labels had success, launching the careers of artists from the different musical genres and winning awards for the contribution to music. The Urban label has widened its roster and now

includes Pop Rock and R&B artists. The success of one of their artists has made the record label one of the largest independent record companies in the UK. It currently has a partnership with a major music label. Ron is involved in the signing of acts, funding recording sessions, and the promotion of the artists and their songs.

Date: 29/09/09
Location: Studios T, London.
Duration: 0:32 *hrs*

Contribution to theoretical insights: Accounts of the decision making of demos as being problematised as a judgement over the sound of the artists. The reversibility of decisions taken in the studio and the struggle to represent the listener. The importance of circulating references of reputation, songs and credits. Studio as a hostile space. The disaggregation of the recording network affording multiple opportunities for decision-making. Producer enrolment of the studios. Record company artist relations and power distribution, the use of mixing engineers to represent the decisions of the record companies able to reverse producer made decisions. The role of sound as a way of commoditising highly variable music.

Supported proposition(s): 3, 4, 5.

20. Thomas, Jim (Producer, Songwriter)

Bio: Jim is in his late 40's. Born in mainland Europe he is a producer and songwriter based in London. His career started in 1977 with a punk band, then he moved to London and started working in studios as a freelance engineer and mixer. Currently a co-writer and producer Jim has a project studio in Studio C complex. He has worked with some of the most successful female artists of the late 20th century, including reaching number 1 in the UK charts. He is strongly associated with the development of Acid House and use of sampling and continues to be a very much in-demand producer with major record labels.

Date: 25/07/08
Location: Project studio in Studio C, London. Small vocal booth, instruments Pro Tools desk, rack of synthesizers and large monitors. Machine room.
Duration: 1:01 *hrs*

Contribution to theoretical insights: The role of the studio as a standardising practice setter through a period of apprenticeship. Multitrack recording practices and the studio layout and materials allow for the inspection and evaluation of the musicians' performances and the disentanglement of the artist from their music and the translation into sound. Accounts of the practices and involving the qualities and decisions about sound. Sound as an actor, directing the disciplining of artists and the mix of tracks into a song. The relationship between rooms and sound how they support quality judgements. The reversibility and irreversibility of decisions taken in the studio. Account of the structure of songs and their evaluation according to listener expectations; the producer replaces the audience. Accounts of the studio as a hostile place where the producer acts as a buffer while utilising the isolation of the artist. The use of mixing engineers to reverse the decisions of the producer in the interests of the record company.

Supported proposition(s): 1, 2, 3, 4, 5.

21. Hane, Matthew (Vice-President Marketing, Large Audio Equipment Manufacturer)

Bio: Early 40's. Matthew studied electrical engineering at university followed by a studio technology course. He began working in recording studios before moving to manufacturer sales as a product specialist selling mixing desks (analogue) for Soundtracks and then his present company. Currently he manages the product development and marketing of the company's products that include music notation software, speakers, keyboards, effects processors, microphones and pre-amps.

Date: 09/04/09
Location: Company offices, London.
Duration: 1:24 *hrs*

Contribution to theoretical insights: Account of the manufacturer's strategy and relations with engineers and music producers. Descriptions of different sound qualities and the modelling of sound for samples. The disciplining of sound and the design of the interface between it and the producer and engineer. The enrolment of studios and users of their software and hardware.

Written on the whiteboard above his desk was the phrase *"Win their hearts and minds"*. Should perhaps have perhaps read, *"Win their eyes and minds"*.

Supported proposition(s): 1, 2.

22. Nemo, Keith (Producer, Engineer)

Bio: Keith is in his late 50's. He worked his way from assistant to engineer to producer working at a residential studio before joining a major recording studio in London. Since the 1980's he has been a freelance engineer and producer. His long career started with producing early UK Punk bands then in the 1980's he gained success with Indie and Pop acts. He has recently completed a 3-year project remixing and mastering the catalogue of a major international artist.

Date: 14/10/07
Location: Home studio, London. The studio is one control room with a small booth off to one side. A sofa, SSL mixing desk and Pro Tools rig.
Duration: 2:38 *hrs*

Contribution to theoretical insights: Pilot interview revealed the importance of sound judgements and the different qualities of sound in the organisation of the recording project. The flexibly specialised and disaggregated nature of the recording process. The role of the studio as a space in which artists are disentangled from their music and how the producer manages the decisions at different stages. The reversibility of those decisions outside the studio. The role of the producer as spokesperson for the listener and the use of audio equipment to listen as the record would be heard by a listener. The multiple and converging roles of engineer, producer, artist and studio.

Supported proposition(s): 1, 2, 3, 4, 5.

23. Miller, Mick (Mastering Engineer, Co-owner)

Bio: Mick is in his early 30's. He set up Studio U with a colleague after working for large mastering studio complex. He masters records for major record companies and smaller

independent labels. He has mastered on a range of different genres including Heavy Metal, Indie and Girl bands. He is currently concentrating on House music.

Date: 10/03/10
Location: Studio U, London. Commercial facility comprising two well equipped mastering rooms.
Duration: 1:43 *hrs*

Contribution to theoretical insights: Accounts of the practices of mastering including indications of the action at a distance of the producer, the volume quality and its enrolment in decisions with record labels, producers and artists. The use of different kinds of speaker to stabilise the product during broadcast and reception.

Supported propositions: 4, 5.

24. Hands, Elizabeth (Session Musician Manager)

Bio: Late 40's. Set up one of the first diary and contracting service for session musicians. Provides session musicians for popular, classical and film recording projects.

Date: 29/05/08
Location: Studio G, London. Studio G is one of the largest purpose built recording studios in the world. Provides a full range of recording, mixing, mastering services. In 2004 Studio G launched plug-ins that aimed to replicate the sound of outboard equipment from the 1960's.
Duration: 1:27 *hrs*

Contribution to theoretical insights: Introduction to the different spaces within the studio (Studio G). Accounts of the use of session musicians to support multitrack recording practices and values. They support the disentanglement of artists from their music and help create the illusion of performance, and, through stem files, part of the disciplining of artists during stage performance of the song.

Supported propositions(s): 5

25. Wood, Ian (Producer, Engineer)

Bio: 39 years old. Formerly house engineer and producer at a major London recording studio, he is currently freelance and works with a large number of successful artists from across a variety of musical genres.

Date: 30/03/09
Location: Home Studio, shed at the back of the garden. One soundproofed vocal booth, overlooked through a window by a control room with Pro Tools-rig, large speakers and an outboard effects bank. Surrey, UK.
Duration: 1:50 *hrs*

Contribution to theoretical insights: Descriptions of the decisions taken by producers and the metrology of sound judgements help support the view that the studio is a centre of calculation. Accounts of the reversibility of decisions taken in the studio and at the producer's desk. Accounts of their use of the studio and the design of the space. Role of the project studio and the disciplining of artists and their music. Descriptions of the recording process, and the practices by which musicians are separated from their music and judgements of the sound are made. Classification of the music product as a simulacrum with over-produced used to describe when the producers have left a trail thus revealing their part in the construction of the record. Accounts of live music projects and how the studio recording disciplines the stage performance.

Supported proposition(s): 1, 2, 3, 4, 5.

26. Fitz, Robyn (Producer and Artist Manager, Artist and Repertoire, Record Label Management)

Bio: Robyn began her career in Australia as a music journalist then moved into A&R and then record label management. After ten years in record management she moved to the UK and is a producer/artist manager with Moon Management, an artist/producer management company with a publishing division and a record label. The company have a roster of very successful Pop and Rock bands.

Date: 05/02/08
Location: Cafe in Clapham, London

Duration: 0:58 *hrs*

Contribution to theoretical insights: Accounts of producer and artist management strategies, and relationships with artists and producers over the duration of the often disaggregated recording project. The role of reputation and buzz as circulating references. Descriptions of different studios and the challenges faced by artists and producers. The need to enrol the A&R representative in the role of the producer and the sound qualities selected for the record. Accounts of the decisions made by producers and the management of the studio space. Accounts of the different contracts used with producers and how different producers are categorised by their sound and people management skills. Discussion of home or project studios and the difficulties experienced by commercial studios.

Supported proposition(s): 3, 4.

27. Church, Charles (Engineer, Producer)

Bio: Charles has spent 20 years working in studios. He began as a night receptionist/tea boy at a London studio, and then moved on to tape-operator and house engineer at another London studio. In 1997 he went freelance. He has engineered and mixed for a wide range of popular artists. For the last few years he has been working with a global pop star as an engineer at his studio in Tuscany, Italy and on recording sessions in studios in Los Angeles and London.

Date: 1/04/09
Location: Cafe, London.
Duration: 1:24 *hrs*

Contribution to theoretical insights: Accounts of the use of studios to disentangle the artists from their music, as hostile places that can interfere with artists' performance. Description of the decisions made in the studio and qualities by which music and sound is judged. Descriptions of interface with the Pro Tools screen and other equipment and how the engineer and the equipment become one. Descriptions of songwriting sessions that include discussions about sound alongside musical issues. Identification of sound as an actor: something that changes the behaviour and interpretations of people. Account of live performance and the relationship

between it and the studio. The disciplining of the listener through the manufacture of authenticity by the studio/engineer/producer hybrid.

Supported proposition(s): 1, 2, 3, 4, 5.

28. Jenkins, Larry (Producer, Artist)

Bio: Larry is in his 60's. He is a bass player who started in bands during the 1970's including performing with star artists of the period. Larry began producing records in the 1980's and has won a Grammy. Strongly associated with the development of music producers in the UK he also started a record label that he wound up in 2008. His early band has reformed and he continues to tour and record with them.

Date: 4/12/07
Location: Home studio, London.
Duration: 2:39 *hrs*

Contribution to theoretical insights: Account of being an artist and working with producers revealing the contest between artists record label representatives and producers. Songwriting and the use of structural formats (bridge, hook, chorus, length). The decisions taken by producers during the recording project and the producer's enrolment of sound to translate the artists' music into a more measurable set of qualities. The multiple roles of those in the studio and the means by which decisions, often contested, are organised. Means by which sound is disciplined and authenticity manufactured during the multitrack recording approach. The disaggregation of the recording network and the reversibility or not of decisions taken in the studio. Accounts of recording reflect the two values of performance and production and the occasions when they conflict.

Supported proposition(s): 1, 2, 3, 4, 5.

29. Katz, Barry (Studio Manager, Engineer)

Bio: Barry started work at Roundhouse studios in Chalk Farm in 1982 working on recordings of popular 80's acts. In 1987 he joined the engineering department of a major record label. His work has received numerous Grammy (Gramophone) awards for engineering and he worked with international classical artists and recorded world-leading orchestras such as the Berlin Philharmonic. In 1997 Barry started a recording studio and facilities company with a colleague. He continues as an engineer as well as providing recording equipment for studios and live recording events. Recent work includes crossover projects that mix popular music recording and classical approaches.

Date: 7/07/08
Location: Studios V has 2 mixing suites, mastering facilities and portable equipment designed to be moved to live events. There is no live room as they record in location such as churches, concert halls, and theatres. Numerous platinum discs line the walls.
Duration: 1:06 *hrs*

Contribution to theoretical insights: The differences between mobile recording and studio recording. The multiple roles of the studio actors, conflicts that can arise and the way sound is enrolled by producers to resolve them. The reversibility of studio decisions and the attempt by non-studio personnel to influence decisions in the studio. The metrology of sound and ways of selecting and evaluating quality. The use of the studio space to organise practices and discipline people. Particular accounts of the recording of voice and the manner in which sound effects, microphones and studio space is assembled to improve decision-making opportunities. The relationship between space, rooms and sound and the differences between recording in spaces designed to represent sound and those that aren't.

Supported proposition(s): 1, 2, 3, 4.

30. Alastair, Joe (Composer, Arranger)

Bio: Joe is an extremely experienced composer and arranger in his mid 60's. Joe started his musical career early, writing a top ten hit whilst still at school. Having trained at a world-renowned music college, he started working as an assistant producer recording with major

artists of the 1960s. Since the 1970's Joe has arranged music for a long list of successful international artists. In the 1990's he also began to get involved in crossover (Pop/Classical music) projects with pop acts, arranging string sections for commercially successful pop artists and conducting professional orchestras during the recording of his arrangements/compositions.

Date: 19/02/07
Location: Studio G, London.
Duration: 0:31 *hrs*

Contribution to theoretical insights: Accounts of different recording values, performance, accuracy and authenticity. Relationship between digital technology and producer agency.

Supported proposition(s): 3.

31. Berg, Jo (Artist, Producer, Mixer)

Bio: Jo is 35 years old. After studying Music Engineering, he began programming and performing in electronic synth bands in Norway. In 1999 he formed a duo, and signed to an independent record label. He has performed regularly in Northern Europe and continues to write, record and produce records for other Scandinavian Pop/Techno synth bands.

Date: 7/11/09
Location: Project studio in Oslo, Norway.
Duration: 2:03 *hrs*

Contribution to theoretical insights: The translation of artists' performance and the recorded music into judgements about sound. Accounts of the representation of sound as various qualities and the use of recording equipment to 'open up' the music, subject it to interrogation and make changes in sound qualities within individual instrument tracks before combining them to form a song. Accounts of performing live supported the theory that sound disciplines artists both in the studio and on the stage.

Supported proposition(s): 1, 2, 3, 4, 5.

32. Faulks, Owen (Engineer, Studio Owner)

Bio: Owen is in his late 40's. He was a musician for 20 years playing drums and guitar in numerous bands, and by his reckoning has performed at least 2000 times in gigs across the UK. In early 2000 he built his own studio and began recording and engineering artists across Country music and Rock genres. He is invited to test audio equipment by manufacturers and writes for music magazines on creating sounds in the studio.

Date: 4/12/08
Location: Studio F, London. A new studio with two recording rooms and a control room set in a country house and grounds.
Duration: 2:38 *hrs*

Contribution to theoretical insights: Accounts of the mechanics of multitrack recording, the ways in which producers translate the music of the artists into the sound of the studio or producer. The relationship between recording equipment (microphones, editing software, effects racks, mixing desks) the disciplining of the artists (especially the percussionist) and the decisions of the producer. The relationship between live performance and the studio process and recording. The account of the task of constructing natural sounding results, a simulacrum of the music. Interpretation on the contribution of the project studio to the recording network.

Supported proposition(s): 1, 2, 3, 5.

33. Lawson, Derick (Artist)

Bio: Derick is in his 30's. He has been playing in indie/punk bands for around 14 years. He is currently in an unsigned band that plays live regularly in London. His band self-finances, and self-produces their own material, currently comprising 2 EPs and an album.

Date: 06/07/09
Location: Office, London
Duration: 1:04 *hrs*

Contribution to theoretical insights: Accounts of performing in different spaces (rehearsal rooms, studios, stage) and the different values and practices associated with each location.

Reasons for selecting particular studios and the discipline imposed by sound and the self-surveillance dynamic created by the headphones and necessity of capturing clean sounds. Interpretations of the values of multitrack recording (separation, manipulability, reversibility, clean sound capture). Disaggregated nature of the recording network; the migration of decisions out of the studio room. Views of mastering engineers as transforming the recording into a song, something that sounds like broadcasted product.

Supported proposition(s): 1, 2, 3, 4, 5.

34. Harris, Nigel (Artist, Engineer, Songwriter, Producer)

Bio: 29 years old. Nigel is a founder member of a critically acclaimed Indie Rock band. From 2002 to 2007 the band toured heavily and released 4 albums working with leading music producers from the UK and the US. He recently built a studio, and, as well as recording their own material, Nigel produces albums for other artists within Indie music and carries out development work (creating demos for bands the labels are interested in signing) for major record studios. After the band split up Nigel formed another, whose debut album received an 8/10 score from New Musical Express (NME). This was followed by another band project that have begun touring and released their first album.

Date: 29/09/09
Location: Cafe, Newcastle
Duration: 1:27 *hrs*

Contribution to theoretical insights: Accounts of songwriting as a process where sound qualities not just musical issues are considered. The same encroachment of sound is also present in descriptions of working on demos for bands being considered by record labels. Descriptions of the disciplinary nature of the recording and production process where producers enrol the studio to separate the artists from their music and make his own interventions and judgements. The problematisation of the recording process as an unnatural space where authenticity is constructed and the producer positions himself as the audience. The reversibility and conflict over the decisions made in the studio. The use of sound as a comparable quality and set of

measurable variables used in selecting producers, and artists. The power of the producer through their management of sound. He described how he liked to put a sound into the recording, something not linked to the music. Only he know it was there. Other listeners wouldn't be able to hear it unless they knew it was there.

Supported proposition(s): 1, 2, 3, 4, 5.

35. Macleod, Paul (Artist)

Bio: Paul is 28 and in an unsigned band. Paul studied music at college and played guitar in a number of bands before joining the band in 2005. He performs regularly at London pubs and clubs including Barfly Purple Turtle and festivals at Tamworth and Hyde Park, and works as a session guitarist around studios in London and the UK. The band have mainly self-produced their own material distributing it on their Myspace site and at gigs. However they recently attracted the interest of a successful producer who had just produced the new album by a new top ten charting indie band. They recorded a number of songs with him at his home studio.

Date: 3/11/09
Location: Bar, Surrey.
Duration: 2:11 *hrs*

Contribution to theoretical insights: Account of songwriting as a process involving sound judgements as well as key, notation, rhythm and arrangement. Description of songwriting distributed in time and space using files sent between band members. Music and sound is transportable and no longer tied to the studio. Description of working as a session musician the disciplinary features of the studio and the use of references by producers to indicate musical style they required. The disentanglement of a performer from their music is highlighted in the description of using other recorded tracks to guide the musician. The importance of reputation in a flexibly specialised network. Organisation of sound between the control room and the live room was designed to facilitate performance for the musician and analysis and control for the producer. The separation of the artists from key decisions such as those involving the mix of tracks and the effects placed on them. Description of the different values when playing live and

when playing in the studio. Speaking to him after the recording sessions had been completed he said he was pleased that the fans could listen to the songs before they go to the live performance because *'if they haven't heard the song before the gig is just noise and mess'*. This is a further indication of the stabilising operation of the studio and the recording network.

Supported proposition(s): 1, 2, 3, 4.

36. Sprake, Anton (Producer, Engineer, Studio owner)

Bio: Built Studio W, converting it from an old cinema in 1972. He has produced and engineered some major international acts, as well as more nationally successful artists. In 1996 he moved into songwriting and composing. He has experience of working in a wide range of studios in Paris and London. He has won 6 Grammys.

Date: 25/09/08
Location: Copenhagen, Denmark
Duration: 1:26 *hrs*

Contribution to theoretical insights: Accounts of decisions and values involved in analogue recording and digital. Description of building large commercial studio in Copenhagen and the relationship between space and sound. The use of microphones to collect the sound of the room and other microphones to collect the sound of the instruments. Description of the role of the studio in the recording process and the importance of sound as a reference and as an element used to select producers. The various ways musical performances are disciplined by the studio and equipment. The reversibility of decisions and the disaggregation of the recording network. The shifting roles and identities of the artists, engineers, studios and producers.

Supported proposition(s): 1, 3, 4.

37. Baker, Ira (Producer, Musician, Songwriter, Composer)

Bio: Ira is in his mid 40's. He began his career as a composer for dance, theatre, and film before adding music production to his range of activities. He has released three albums of his own

music, and produced albums for other artists. He plays the piano and has been in several bands with experience of playing live with major artists.

Date: 24/09/09
Location: Studio X, London. Medium sized commercial recording studio.
Duration: 1:08 *hrs*

Contribution to theoretical insights: Accounts of how artists become enrolled by the recorded versions of their music. How music meaning and expression that was situated in a particular context becomes fixed and can be replicated. The difficulty of recreating the energy and feeling of the demo during the multitrack recording process. Description of the studios as clinical hostile places that disentangle the artist from their music. The disciplinary nature of the studio live room and the role of the producer in decisions over sound and performance.

Supported proposition(s): 1, 5.

38. Efford, Eric (Engineer, Mixer, Producer)

Bio: Eric is in his early 30's. He has won a Grammy award for engineering on one of the best selling albums in the last 5 years. He works with a wide variety of artists including established stars, newly successful artists and up and coming bands. He has also mixed the audio for music DVDs of live concerts.

Date: 24/02/09
Location: Studio N, London. A well established professional recording and mixing facility with a number of studios and smaller production rooms.
Duration: 1:07 *hrs*

Contribution to theoretical insights: The role of studios as establishing sets of practices and recording values. Examples of the shifting identities and roles within the network in this case an engineer becoming a producer. Translation of the music of the artists into sound controlled by the producer and engineer. Various ways artists and sound is disciplined. Use of musical references to identify desired sounds to apply to artists' music. Accounts of the ways flexibly specialised projects are launched decisions made and stages followed. Studio as a hostile place

for artists removed to booths or behind glass and asked to perform. The relationship between rooms and different locations and sound and the flexibility valued by producers that requires a 'clean' sound to be obtained. The reversibility of decisions taken in the studio allowing for a more disaggregated recording network. The manner in which tracks and sound is organised across a sound spectrum designed to preserve their separation whilst retaining a sense of coherence. The different values associated with live and recorded and the enrolling capacity of the recorded version.

Supported propositions(s): 1, 2, 3, 4, 5.

39. Hinton, Dennis (Studio Manager, Musician, Engineer, Producer)

Bio: Dennis is in his late 20's. He is a musician in a band, and an engineer and co-producer on Dance and Rap recordings for independent record labels.

Date: 1/08/08
Location: Studio E, London. High specification commercial studio with residential facilities built in 2007. Large live rooms, an SSL desk, and a wide range of instruments, microphones, effects, and amplifiers.
Duration: 1:19 *hrs*

Contribution to theoretical insights: Accounts of the use of a studio during a disaggregated recording project and the nature of the relationship between artists, record labels and producers. Price taking position of the studio and the response of the studio to reduced ability to command set fees; in particular the way the studio reorganises the use of its space. Classification of the studio as a contested decision making space configured to improve judgements of sound by the producer. The reversibility of such decisions outside the studio. The multiple and fluid roles of studio, engineer, artist and producer can lead to times when the studio personnel are enrolled into taking a producing role. The multitrack recording approach, principles of recording that suggest laboratory practices of separation, labelling, removal of unwanted elements to arrive at a clean sample so that later interventions can be made more reliably than on a 'contaminated' sample. The relationship between rooms and sound. The use of musical references to position the attainment of particular sounds as the objective of the recording process. Descriptions of the

process of recording where artists and sound are disciplined and moved through different media and processing points in order to render the music in a desired sound character.

Supported proposition(s): 1, 2, 3, 4.

40. Hinger, John (Studio Owner, Producer, Engineer)

Bio: In his late 50s. Labelled an indie legend for his work in the 1990's with critically acclaimed bands, one of his albums is commonly included in expert lists of the 100 best ever albums (e.g. Channel 4/Guardian, 1997). Produces albums for various up and coming bands.

Date: 04/08/08
Location: Studio Y, small commercial studio, London.
Duration: 1:02 *hrs*

Contribution to theoretical insights: The flexibly specialised potential of music production. Accounts of self-producing artists being rebuffed and the producer's right to work without interference on obtaining the sound agreed at initiation of the project. The attempted exclusion of record label representatives (A&R) from the studio. The role of musical sound references in the pre-production phase and the overall objective of the project. The nature of the contract with labels and artists. Comparisons between analogue recording and digital with the view that there is little essential difference. The different values of performance, artistic honesty and production. The disciplining of artists in the studio, the interrogation of their performance by the producer and the removal of the artists during mixing. The producer assembles hybrid associations by 'slaving' equipment and people so they are co-ordinated. The relationship between the room in which listening is carried out and the importance of the final transfer from the studio to the consumer/listener. The reversibility of decisions taken in the studio and the contests that can follow. Descriptions of the different kinds of recording studio using flexible specialisation logic, with the commercial studios attempting to be generalists able to record and produce all characters of sound.

Supported proposition(s): 1, 2, 3, 4, 5.

41. Wallby, William (Producer, Engineer, Artist)

Bio: In his late 40's. Began as a keyboard session musician in the early 1980s playing on recordings with successful recording artists from the period. William started working in studios as an engineer, wrote and engineered a lot of Dance music and then began to take on more producer and remixing roles. He has worked with a large number of producers including Quincy Jones and recorded in studios in the US, UK and Europe. Nominated for a Grammy for his production of a top selling UK single, he has also won an Ivor Novello awards for songwriting.

Date: 31/07/09
Location: Home studio, London. Set in front room of his house, no sound treatment or vocal booth. Platinum and gold records are lined up on the walls.
Duration: 2:19 *hrs*

Contribution to theoretical insights: Circulating references of royalties, reputation and musical references help tie together the actor network of music production. Accounts of the relations between record labels, artists and producers as involving the situated decision making of the producer who establishes the ability to make quality judgements over the process and outcome. The tension between decisions taken in the studio and the possibility of reversing some of these once the recording has left the studio. Challenge to the view that the project is flexibly specialised. Descriptions of the values of the recording project, performance, musical ability, song structure, spatial control and judgement all set within a disciplinary methodology. The evaluation of demos and up and coming artists through the prism of sound (as opposed to music). The multiple roles of the recording network actors and the ways identities are established and protected. Classification of the producer's contribution as untraceable difference between the performance and the eventual record. Various ways artists and sound is disciplined often with the objective of making the song sound as if it were performed and simply captured.

Supported proposition(s): 1, 2, 3, 4, 5.

42. Shepherd, Dan (Artist, Songwriter, Producer, Engineer)

Bio: In his 30's. Dan began his career in music in 1987 as the lead singer and guitarist of an Indie band that was supported by DJ John Peel. In 1992 the band broke up and Dan formed an Art Rock band. After an unsatisfactory experience with the major music label they were signed to, he helped set up an independent record company in London. He has written and produced ten albums. The band continues to perform live and tour the UK and Europe. He also produces, mixes and masters for other artists and bands including his trial experience for Madonna.

Date: 28/7/08
Location: University of Westminster, Marylebone, London.
Duration: 1:40 *hrs*

Contribution to theoretical insights: Accounts of both performing and producing music in a range of studios. The translation of the music of artists into sound characteristics that enable the diverse musical styles to be standardised around genre and mode of the time. This is part of the commodifying practice of the recording studio. Descriptions of the disciplining of artists using the studio space, sound equipment, the characteristics of sound and the values of multitrack recording. The disaggregated nature of the recording project and the reversibility and irreversibility of decisions taken in the studio, notably the role of the mixing engineer as a post-production role engaged by the record label. Comparisons between 'commercial studios' and 'home' studios and the relationship between sound and space (rooms). The way that artists, their music and performance are disentangled and separated to afford increased manipulation and reconstruction by the producer. The studio and the recording process are described in terms that chime with that of a laboratory. The view that production when successful 'disappears' and the song appears to be a recording (rather than a multitracked, edited production). His belief that live music was a place of artistic honesty rather than the controlled and constructed ordering of the studio reinforced the importance of looking at the relationship between the studio and the live performance.

Supported proposition(s): 1, 2, 3, 4, 5.

43. Gold, Ned (Artist)

Bio: In his 20's. He is the lead singer of 'Peace Kills', a band formed in 2007. They have performed extensively in the club and festival music venues of the UK supporting established acts. In the summer of 2009 they were part of a bidding war between a major record label and independent record label and a brewery. The band decided to sign with the independent record label and at the time of writing are recording record their debut album with a very successful producer.

Date: 05/08/09
Location: Cafe in the South East UK.
Duration: 1:18 *hrs*

Contribution to theoretical insights: Accounts of writing, practising, performing and recording songs and being the centre of a tussle for their contract. Songwriting is carried out using ideas about the sound of the final recording. The progress of production values into the song creation process signals the degree of influence at a distance the studio holds over the artists. The standardised structure of a song and how that is replicated during the songwriting process. The use of demo recordings to self-surveil their performance and fix the song. The view that producers have the sounds that are currently valued by the market. Descriptions of different contracts offered to them and the reasons for their eventual selection of record label. The values of the record labels and their pleasure at the band not having released any music yet. The disentanglement of the artists from their music and performance during the recording process. The organisation of decision making during the recording project. The relationship between the space the band perform the music in and the sound created. The mixing process where tracks are situated in the song and how this is done without the artists being present. The relationship between live performance values and studio performance values.

Supported proposition(s): 1, 2, 3, 4, 5.

44. Apson, Polly (Studio Manager)

Bio: Started working in A&R in 1989 then moved into studio management in 1998. Currently the manager of Studio Z, responsible for the booking and operation of the studios, which includes negotiating with major record labels and other clients for the use of their rooms and equipment, ensuring the project is staffed (engineers and studio assistants) and marketing and developing the studio.

Date: 01/07/08
Location: Studio Z, London. A large commercial studio with a long history. Two studios, a very large live room, and a comprehensive range of equipment.
Duration: 1:59 *hrs*

Contribution to theoretical insights: The disaggregation of the recording network including the pre-production tasks and decisions being conducted outside and not inside, the studio. The organisation of the studio around the disciplining of sound and the preservation of producer decision-making ability. The tension between the performance and the separation logic of a multitracking studio. Studio as a hotel a facility provider and price taker and less of an agent within the recording network. The failure of studio group Accord to act with a united voice. The importance of location for the value of a studio. The role of circulating references (reputation, songs, credits) in the life of a studio. Role of studios as place of learning and the establishment of the institutions of recording practice. Relationships with producers and the loss of power of the studios in the bargaining process during the initiation and selection of project members. Record company belief that the studio adds little value while the producer does. Producers are mobile while studios aren't.

Supported proposition(s): 1, 2, 3.

45. Norman, Walter (DJ, Producer)

Bio: Walter started out in music as a DJ and dance music producer working in the clubs around London such as the Ministry of sound. He then joined an independent record label, which started in 1996 with Dance, R&B, and Folk music. After four years of operation the company

pitched for commercial music contract and won it. The company then gradually moved into audio production for film and television. They use a combination of a combination of mixing rooms and the hiring out of studios such as Air Lyndhurst. They are an award winning music production house with clients that include large global corporations, major media organisations, and film studios. Walter is currently head of production and business development.

Date: 18/07/08
Location: Studio offices, London. Two mixing and editing suites.
Duration: 0:45 *hrs*

Contribution to theoretical insights: The account of constructing sound using samples of recorded sound and virtual musical instruments. Sounds are described as being in a 'bank' accessible at the click of a mouse. The characteristics of space are also available, disentangled from the physical space and able to be applied to add reality.

Supported proposition(s): 5

46. Toynbee, Steve (Engineer, Producer)

Bio: In his 20's. Steve studied Music Technology at University and went on to take an Audio Engineering Diploma at SAE London. After playing in unsigned bands he worked in a number of studios in London before joining Studio Z as a house engineer. He has experience of working with major international artists. In 2008 he set up his own project studio in London. He has been nominated for a Mercury Music prize in 2008.

Date: 1/07/08
Location: Studio Z, London.
Duration: 0:30 *hrs*

Contribution to theoretical insights: Accounts of being an engineer who is moving into producing; the producer is an asserted role an identity that is created by the enrolment of others in the recording network. Engineers use microphones to disentangle the different sounds of the musical instruments and performers. The values of clean sound, purity, separation etc enables the producer to work on the tracks, alter, adjust and mix without their decisions being

noticeable. The engineer is a connector who wires up the creators of sound with the producer. Descriptions of the recording process that disciplines artists, using their own recordings to create an effect of the performed sound while they work separately. Accounts of the use of the control room to help organise agreement of the decisions of the producer. Different characteristics of sound quality, including the sound outside the studio in order to listen for the audience. Disaggregated nature of the recording project and the role of project studios to enable producers to transport the sound out of the studio and ensure more control over the decisions making process. The metrics of digital allowing recorded sounds to be transferred, to circulate between different computers (Commercial and Home). The way the transferral process can fail and produce artefacts: noticeable constructions. This is compared to the desirable artefacts of analogue recording practices. Reference to playing the mix (fingers on faders) where now with digital there is the automation function challenges the producer as musician or the studio as instrument view.

Supported proposition(s): 1, 2, 3, 4, 5.

47. Miles, Calvin (Mastering Engineer)

Bio: In his 60's. Calvin is a very well respected mastering engineer who has been chief engineer at some of the leading mastering studios in the UK. He has mastered recordings for a very long and varied list of international artists.

Date: 24/7/08
Location: Studio A1, London. A small professional studio.
Duration: 1:13 *hrs*

Contribution to theoretical insights: Description of the role of the mastering engineer as being an agent of standardisation of disciplining sound so that that it behaves in a planned way in different environments. Discussion on the type of instructions of the record label and the standardising of different songs so that they appear to come from the same studio or where recorded in similar ways in order to make an album. Account of the relationship between the equipment and their judgement, their ears. They play each piece of kit against each other in

order to hear how they have affected the sound, and, by revealing this, allow them to make their own judgements. Examples of the contest between different sound qualities from the different members of the project (artist, producer, record label) including the volume level 'wars'. Disciplining musical taste by applying sound characteristics of previously or currently successful songs and thus contributing to the commodification of the music.

Supported proposition(s): 4, 5.

48. Price, Edward (Studio owner, Producer, Artist)

Bio: In his late 30's. Musician who plays as a session guitarist and has released his own records. He has produced and recorded dance music for major and independent labels. In 2007 he built Studio D.

Date: 29/09/08
Location: Studio D, London. Small sized commercial studio with 1 live studio, 1 mix edit room, separate vocal booth, instruments, effects boards and amps. Kitchen and relaxing room with pool table.
Duration: 1:00 *hr*

Contribution to theoretical insights: Accounts of different studio strategies and the distributed nature of the recording project. The importance of rooms in enabling judgements to be made about sound, the disciplining of artists using the spatial arrangement of the studio and the tracking desk. Role of producer as sound quality judge and the way that his decisions in the studio are carried onto the stage leading to the action at a distance of the producer and the disciplining of the live performance. The organisation of sound and artists within the studio live room so that different sounds are heard by each studio member; artist's sound is designed for performance while the producer's sound is designed to allow for judgement and decision-making. Design of the studio to discipline sound and enable producer-led decision-making.

Supported proposition(s): 1, 2, 3, 5.

49. Scope, Roger (Artist, Singer-Songwriter)

Bio: Roger is in his mid 30's. Released his first single in 2006 and his debut album which he co-produced in 2007. He is a critically acclaimed singer described as being in "the premier league of British songwriters" by the Sunday Times. Roger has recorded in a range of studio environments from the well-established and large Air Studios to a temporary studio in a rented cottage. He tours and performs at festivals such as iTunes festival and Glastonbury.

Date: 30/06/09
Location: Cafe in Blackheath, South London.
Duration: 2:17 *hrs*

Contribution to theoretical insights: Accounts of a performer writing songs, working in studios and performing live. Songwriting process includes the consideration of how the music will sound. Home studio is used to record and play back the performances in order to identify sound requirements. Self-surveillance through the recorded versions of himself. Attempt to distinguish himself and reinforce his authenticity by keeping errors in the performance on the final record. Different views of authenticity. However with this the account also included descriptions of augmenting the real. Accounts of the battles in the studio control room (when he was self-producing) over the engineer erasing errors or natural artefacts such as fret buzz or breathing. The importance of space and sound and the desire to record space by for example recording in a hallway or remote cottage also described as way to escape the studio methodology of separation and clean takes. How working with different producers results in different sound qualities being applied to his music. Recording as a disciplinary process involving sound and space, instrument and sound, performance and sound managed by the producer. Descriptions of negotiating contracts and studio time. The interests of the record label differing from the artists' interests; particularly in regards to the standardisation of song structure and radio sensibility (time/ volume). The values accompanying performing live and performing in the recording studio. On the relationship between the studio and the stage he told an interesting story of how during the performance he rang up his producer and co-writer and played the recorded song while the audience sang the words. This made me think of the union between the studio and the stage and

the enrolment of the audience; they listen to the recorded song and then participate in the live reproduction of it.

Supported proposition(s): 1, 2, 3,

50. Pickard, Ruth (Studio Manager)

Bio: Ruth started in post-production and film editing. Then she moved to running a mobile recording facility. When a successful 60's performer turned record label manager and producer built Studio B in the early 1970s, Ruth headed up the management of the studio. She liaises with record labels and producers, negotiates the terms of the use of the studio, and organises the provision of studios and facilities for recording sessions. She has worked with an extensive range of artists, from international stars in the Rock and Pop genres to successful UK based acts.

Date: 18/07/08
Location: Studio B, London, UK. Studio B is a large commercial studio with 3 live rooms (Studio1 can accommodate 65 musicians) and a production room with an SSL mixing desk booths to record over-dubs. It also offers accommodation facilities.
Duration: 1:03 *hrs*

Contribution to theoretical insights: Accounts of managing an established recording studio: negotiating with record labels and producers, delivering and developing studio resources. The disaggregated nature of the recording project, and the changes in working practices that result. Descriptions of the studio as a facilities provider, a fixed entity, immobile and situated. Studio strategies involving the use of the space and equipment, extension of activities into A&R and publishing and contractual terms. Failure of the studio initiative, Accord, and the change in APRS terms from studios to services that include manufacturers. The role of circulating references such as credits, in the use and degree of agency of the studio. The price taking position of the studios and the non-value adding characterisation of the studios by record companies.

Supported proposition(s): 2, 4.

51. Kato, Martin (Artist, Songwriter, Producer)

Bio: Kato is in his mid 40's. Martin was the lead singer of a Dance/Synth Pop group. In the early 1980s the band had critical success and following the increasing popularity of Dance music and the Rave music scene in the UK in the late 1980s, experienced commercial success with number 1's in Billboard chart of the US. In 1993 they recorded their last album and Martin moved into producing and writing Pop and Dance music for a range of successful European artists. He frequently carries out development work for record labels helping newly signed artists or artists under consideration to develop their music and sound.

Date: 08/07/09
Location: Cafe, London.
Duration: 1:24 *hrs*

Contribution to theoretical insights: Accounts of songwriting and the use of song structure standards to discipline music and the creative process. The extension of the studio into songwriting through the re-problematisation of demos as indications of the likely or possible sound qualities of the proposed artist. From artist development to sound development. Judgements of record labels made on sound not only musical qualities. Both of these features of the recording network enable the commoditisation of musical product. The disciplining of artists and their music during the studio recording process. The use of various equipment to shape and modify sound. The use of a studio to obtain clean sound that maybe manipulated without the intervention being noticeable. An interesting story on this was his description of the glitch movement; a style of music that used the skipping sound on digitally recorded music as a sound quality used in the song. He saw it as a challenge to the clean sounds of the studio, but it also reveals the producer's power in being able to recreate this authentic error of reproduced sound. The standardisation of the recording process following the organising logic of the multitrack recording mode of music production. Descriptions of the relations with record labels and the disciplining of musical taste through genre standards. The reversibility of production decisions and the difficulty of securing a reward for them. The disciplining of live performance by the recorded version and the relationship between sound and space.

Supported proposition(s): 1, 2, 3, 4, 5.

52. Simeon and Sonia (Artists, Songwriters)

Bio: Simeon and Sonia are both in their mid 30's. Lead guitar and singer and vocals and keyboards respectively, they are the key members of the band 'Mountain Fire'. They have recorded 3 self-produced EPs and recently recorded with producer Alan Scholes. They are unsigned and perform live in venues around London including the 100 Club and Camden Roundhouse. Originally based in New York, the band has played at the famous birth of punk venue the CBGB.

Date: 17/06/08
Location: Home in East London.
Duration: 1:53 *hrs*

Contribution to theoretical insights: Accounts of the recording process involving the disentanglement of their music, performance and themselves, occurs. The disciplinary nature of the studio space and layering recording mode of organising. The power of the producer as one who represents the listener and translates their music into sound that is aimed at the market. The disciplining of the listener through song conventions/standards. The association of a producer with the success of a particular artists and the role of that reputation in the power of a producer during the recording project. The studio as a laboratory with the producer inspecting sound, tracking down unwanted aspects of sound and manipulating the final version. The use of recorded songs (CDs; circulating references) to guide decision-making and link the studio with the music industry and market. The construction of authenticity through the use of sound manipulation equipment and software. The way unsigned artists are enrolled by producers to become their representatives.

Supported proposition(s): 1, 2, 3, 5.

53. Target, Cliff (Studio Owner/manager, Producer, Engineer, Artist)

Bio: Cliff is in his 40's and started in the music industry as a keyboardist playing in bands and working as a session musician. He has produced albums for major labels such as Sony BMG

and smaller independents. In 1993 he built Studio B1. The studio is made up of two live rooms a control room and a production suite rented out to a producer.

Location: Studio B1, London. The studio is made up of two live rooms a control room and a production suite rented out to a producer. It has a 1960s Trident Desk and full range of outboard and Pro Tools equipment.
Date: 3/11/09
Duration: 1:36 *hrs*

Contribution to theoretical insights: Characterisation of the studio as a laboratory a space of interrogation and control where the discipline of sound involves being able to move sound around, inspect it, adjust it, combine it with other sounds. Design of the control room to aid evaluation of sound and make judgements on quality. The control room has leaked into the live room with mini-mixing desks within reach of the artists allowing them to adjust what they are hearing. Importance of being able to control how sound is heard in different locations once it has left the studio environment. The way that stems allow the reversing of decisions in the studio but only limited to studio metrics such as volume, equalisation, compression and not musical ones such as tempo arrangement or key. This is an enrolment of the record company in the studio related systems of calculation. Descriptions of disciplining artists during the recording process squeezing out creativity with creativity only surviving in the margins, in between takes. Reference to mass compatibility as a way of describing mass production or commodification. The link between advertising and production is suggestive of the networked nature of the recording project.

Supported proposition(s): 1, 2, 3, 4, 5.

54. Harley, Gerry (Studio Manager, co-owner)

Bio: Gerry is in his late 30's. He started as an assistant engineer in studios around London. In the early 1990's he started an Alternative Dance music record label, which lasted for 10 years. During this time Gerry joined Studio A as operations manager and has a part-ownership in the company. Gerry is involved in the management of the use of the studios, negotiating with

producers and record labels, organising the technical resources of the studios and of growing the group by assessing the business cases of studios under threat.

Date: 22/09/08
Location: Studio A offices, London. The Studio A group currently own a number of studios.
Duration: 1:14 *hrs*

Contribution to theoretical insights: Account of price based competition within the studio market encouraged by record labels that don't value the contribution of the recording studio to the recording process. Different studio strategies characterised by attempts to stabilise relations with producers either through joint ventures or by long-term room rents. The characterisation of a studio as an immobile facilities provider and the development of Studio A's dry hire strategy (studios only opened when someone books them) that is a reflection of such a definition. Attempt to disengage themselves from manufacturer control through the reduced emphasis on the range of equipment offered. The values informing the design, use and build of studios with a tension between separation and sound capture and performance. This is resolved with large (and thus expensive) studio rooms. Views of the studio market and the non-representative make up of the studio group, APRS.

Supported proposition(s): 1, 2, 4.

Observations of Recording and Production Sessions

1. Studio I (Studio A group)

Recording session managed by Alan Scholes (producer) with artists Simeon and Sonia of 'Mountain Fire' plus other session musicians.

Location: London. The studio is part of the Studio A studio group. There was a live room overlooked through a large window by the control room. The control room was slightly smaller and had a Pro Tools rig, a Neve tracking/mixing desk, outboard equipment and monitors. I sat in the control room on the sofa behind the mixing desk.

Duration: Approximately 3 hours
Date: 17/06/08

Contribution to theoretical insights: The disentanglement of the artist/performers from their music and their performance through the tracking approach to recording. The use of space (observation window, producer's chair, artists sofa) by the producer disciplines the artists and allows for the capture inspection and manipulation of sound. Use of musical references to aid construction of the desired sound. The sense of surveillance was strong observing the extremely intimate social management of the person through the management of the space.

Supported proposition(s): 1, 2, 3, 5.

2. Studio J (Studio A group)

Mixing session with the artists, studio assistant and producer, Alan Scholes. Tracks were played and sound quality decisions were made. Tracks were isolated examined and then put back into the mix of tracks to evaluate how they worked in aggregate.

Location: London. I sat on a sofa at the back of the mixing studio. The studio is part of the Studio A studio group and is a high specification professional recording studio with an SSL 4000 desk. There is small dubbing room to one side. In place of the observation window in front of the desk is a large screen displaying the automation and settings of the final mixdown.

Duration: Approximately 2 hours
Date: 19/06/08

Contribution to theoretical insights: Studio as a place of calculation a laboratory that allows the producer to inspect, label, adjust, replace and assemble sound. But also a space where the outside world is brought into line, by fixing the qualities of the song so that they survive the broadcast of the sound on radio and the replaying of the song on personal music players. How performances of the artists are adjusted and copied without the interventions into sound qualities revealing their constructed nature. Use of musical references to establish desired sound. The different use of speakers or monitors.

Supported proposition(s): 1, 3.

3. Studio G

Recording session for a feature film. A full orchestra in studio 1 live room plus conductor with a communication link to the control room where the music producer and director gave instructions and made judgements. The musicians are all wearing headphones connected to the control room. Microphones surround them. One stream of sound heads towards them allowing them to hear their performance while another stream of audio is drawn into the control room.

Location: London. I sat on the observation deck in Studio 1. It was inside the recorded space and reached by a sound proofed door from a hospitality suite. I also visited the machine room where the studio assistants managed the recording equipment and a representative from the film studio observed the control room worked on excel spreadsheets of costings.

Duration: Approximately 4 hours
Date: 29/05/08

Contribution to theoretical insights: The disciplining of the musicians (observation window, red light, headphones, click track) necessary to obtain their music.

4. Studio H (Jo Berg's Project Studio)

Mixing session for a group Jo was producing. Tracks were arranged and adjusted to sit in the mix at the desired volume and location on the stereo spectrum. Effects were attempted and some editing of the vocal track was carried out.

Location: I sat behind Jo in his small project studio in Oslo. The studio is approximately 6 metres by 4. There was a padded space for recording with a mixing desk at the end of the room and outboard equipment lining the walls.

Duration: 2:23 hrs
Date: 4/11/09

Contribution to theoretical insights: Studio is a laboratory enabling the separation, inspection and manipulation of recorded music. Decisions on how the tracks are assembled into a song are made after repeated comparisons, with tracks being treated with various sound characteristics, poked, prodded before being re-inserted into the mix. The studio is a place of connections. Everything (including artists and engineers) appears to be wired to the desk enabling the producer to access, use or discard.

Supported proposition(s): 1, 3, 4, 5.